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ABSTRACT

Published by the Ohio Association of Two-Year Colleges, the "OATYC Journal" is designed to provide a medium for sharing concepts, methods, and findings relevant to the classroom, and an open forum for the discussion and review of problems. This 16th volume of the journal, consisting of the fall 1990 and spring 1991 issues, contains the following articles: (1) "Miami University Middletown--Celebrating Its Silver Anniversary Year!" by Dick Sollmann; (2) "Using Tests to Help Students Learn," by Jerry Bergman; (3) "The Federal Supplemental Loans for Students Program: A Bad Bargain for Public Two-Year Technical and Community College Students," by Charles Rubin, Jr.; (4) "Using the Feasibility Study to Promote a Communication Strategy in Technical Writing," by Terry White; (5) "General Education: In Search of Facts," by Lawrence Locke; (6) "A Study of the Instructional Methods in the Introduction to Psychology Classes at Columbus State Community College," by Jonnie H. Budke, Judith D. Gentry, and Garfield A. Jackson; (7) "Do Today's Two-Year College Faculty Members Need the Protection of a National Union?" by Joseph H. Barnett, III and Ed Lamp; (8) "Kent State University, Geauga Campus: A Campus Involved in the County's Economic Development," by Robert C. Peterson and Larry D. Jones; (9) "Narrowing the Gap between Engineering Technology and Local Industry," by Edward W. Lazor; (10) "The Plural 'I,'" by John Fallon; (11) "The Library of the (Not-So-Distant) Future," by Peter Lyman; (12) "On the Road with Technical Writing: Teaching the Employee to Write Better," by Viola Newton; and (13) "Are Faculty Mentoring Programs Effective?" by Linda Houston, Arnold Mokma, and Nancy R. Stone. (JSP)

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OATYC JOURNAL

Vol. XVI Nos. 1-2

Fall 1990 and Spring 1991

Dr. James Fullen, Editor

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OHIO ASSOCIATION OF TWO-YEAR COLLEGES
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OATYC

OHIO ASSOCIATION OF TWO-YEAR COLLEGES

An affiliate of the American Association of Community and Junior Colleges

JOURNAL

Vol. XVI No. 1 Fall 1990

THIS ISSUE:

COMMENT
A Time for Reflections

TEXT
FOCUS: Miami University, Middletown –
Celebrating Its Silver Anniversary Year

Using Tests to Help Students Learn

The Federal Supplemental Loans for Students Program: A Bad Bargain for Public Two-Year Technical and Community College Students

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General Education: In Search of Facts

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A Study of the Instructional Methods in the Introduction to Psychology Classes at Columbus State Community College

FORUM
ISSUE: Do Today's Two-Year College Faculty Members Need the Protection of a National Union?

Members Need the Protection

Really Not the Question

REACTION
Reaction to "Whips, Chairs, and Other Motivational Teaching Tools"

OATYC

Provides:

- Collective influence on the future direction of Ohio's two-year campus system;
- Access to classroom liability insurance protection of $1,000,000;
- An open forum for the discussion of trends, problems, accomplishments, and challenges unique to state assisted, two-year campuses;
- A newsletter which informs members of the proceedings and activities of the OATYC and of Ohio's two-year campuses;
- The *Journal* which provides an opportunity for publication and exchange of scholarly views and concepts;
- Conference and workshops providing opportunities for professional development, visits to other two-year campuses, presentation of papers, and socialization with other two-year campus personnel;
- Affiliation with the American Association of Community and Junior Colleges and its activities throughout the nation.

Purposes:

- To provide a forum in which all state-assisted, two-year campuses can meet to discuss and resolve mutual problems;
- To foster cooperation and communication among Ohio's institutions of higher education;
- To provide the viewpoint of the state assisted, two-year campuses to the Ohio Board of Regents and to the State Legislature;
- To identify and improve the status, prestige, and welfare of all state-assisted, two-year campuses in Ohio;
- To cooperate with other Ohio agencies, colleges, and universities in research and activities that promote the effectiveness of higher education in Ohio;
- To increase the contribution of the state-assisted, two-year colleges to the total educational process in the state of Ohio.

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JOURNAL

OF THE

Ohio Association of Two-Year Colleges

(Affiliate of the American Association of Community and Junior Colleges)

VOL. XVI NO. 1 **Fall 1990**

The *Journal of The Ohio Association of Two-Year Colleges* is published by the Association to provide the two-year colleges of Ohio with a medium for the sharing of concepts, methods and findings relevant to the two-year college classroom and to provide an open forum for problem discussion and review.

Subscription is part of the OATYC active, associate, or institutional membership. However, single copies of the *Journal* are available at $3 each. A yearly subscription is available for $6 to persons or organizations who do not want membership in the OATYC. Postage is prepaid on all orders within the U.S.; $.50 per year is added for Canada, $1 per year for all other foreign countries. Communications regarding orders, special subscriptions, single copies, advertising, and permission to reprint are to be addressed to:

The Ohio Association of Two-Year Colleges
c/o Russell K. Davis, III
University of Akron Community and Technical College
304 East Buchtel Avenue
Akron, OH 44325

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COMMENT

A Time for Reflections

Jim Marcotte

September has passed and the school year is underway. Now is a time of reflection on the start of the school year and looking ahead to the future. Ohio two-year colleges continue to be the route of access for ever increasing numbers of students. Enrollment in two-year colleges is up across the state; access is being provided to an increasingly diverse population. How are we doing? Are we, as a collective entity, meeting the educational needs of our students? Issues facing the two-year college system are:

- An articulation on to four-year schools,
- Courses that are truly on a collegiate level,
- Retention of students until graduation,
- Preparation of students for success,
- Quality of instruction and faculty,
- Relevance of curriculum in terminal programs to the needs of the community.

In order to serve this growing student population, we need to look to increased and/or more equitable funding from the state. If two-year colleges truly are the access for over 50% of the college population, then funding needs to be increased at the state level to reflect these needs. Perhaps an alternative state funding mechanism is in order.

We truly need a first-class two-year college system to maintain an educated first-class population in Ohio to serve an increasingly technical society.

Jim Marcotte
OATYC President-Elect
Cincinnati Technical College
Cincinnati, OH 45223

INFORMATION FOR PROSPECTIVE CONTRIBUTORS

The *Journal* encourages submission of material for any of its sections by faculty, staff, administrators and/or trustees of any of Ohio's community, general and technical, junior, regional and technical campuses. The *Journal* is particularly receptive to articles of general professional importance in the areas of administration, instruction, and baccalaureate or technical studies for two-year institutions.

There are forty-four solicitors of editorial material listed here. Contact your campus solicitor or one nearest you to inquire about submitting a specific manuscript.

Manuscripts must be typed, double-spaced and of approximately 1,000-3,000 words in length. All submissions must be accompanied by a stamped, self-addressed envelope for return. Art work must be black and white. Photos glossy; tables and drawings on 8 1/2 by 11 paper. The name and address of the contributor should be on the back of all art copy.

Editorial Policy

The *Journal* is not responsible for manuscripts or materials lost in mailing nor is it responsible for returning items not accompanied by a stamped, self-addressed envelope.

The *Journal* reserves the right to edit manuscripts to meet its needs and objectives. Where major revisions are necessary, every effort will be made to clear the changes with the author.

Submission deadline for the next *Journal* is March 8 , 1991.

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TEXT

FOCUS: Miami University Middletown – Celebrating Its Silver Anniversary Year!

Dick Sollmann

Each edition offers a visit to an Ohio two-year campus. Celebrating its silver anniversary, Ashtabula of Miami University has requested a tour of its campus. In this issue, Dick Sollmann introduces the Ashtabula Campus to the reader. Congratulations, Ashtabula.

The return of students to two-year, community and technical college campuses across Ohio this fall marks an especially significant event. This academic year is special because it is the 25th such beginning for Miami University Middletown, the first branch campus of the state's public universities to be established. With the planning for a "community-based" campus of Miami in Middletown, and the subsequent opening of the campus in the fall of 1966, a model was established for development of the branch campuses throughout Ohio.

As Miami University Middletown concludes its first quarter century of service to the Middletown region, it seems only appropriate to reflect on how it all began, and where it is headed.

Commons

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The presence of higher education in the city of Middletown actually dates to the end of World War II and the "Serviceman's Readjustment Act of 1944," or the GI Bill of Rights. Miami University, in concert with concerned citizens of Middletown, organized a downtown center for veterans who sought a college education. Classes met during the 1950s in Middletown High School with University faculty from Oxford commuting to the new center to teach. From this meager beginning, a genuine community-based college, eventually to become Miami University Middletown, would develop.

Students in Biology Lab

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The a new campus had its beginnings in conversations held as early as 1961 between Herman Lawrence, principal of Middletown High School, and Earl V. Thesken, then Dean of Educational Services at Miami. Leaders of the Middletown community sought to generate interest in founding a junior college in Middletown, and during a meeting of the Middletown Board of Education, several persons urged exploring the idea with Miami.

A key link in this chain of events was Logan T. Johnston, president of Armco Steel Co., and a member of Miami University's Board of Trustees. He asked Dean Thesken to come talk with him about the idea, and together they approached Miami President John D. Millett. He was enthusiastic, but said that in order to have a branch of Miami University in Middletown, the city would have to raise and contribute about half-a-million dollars. According to Dean Thesken, Logan **Johnston said "half-a-million won't do much–we'd better raise a million!"**

Students in Computer Center

Johnston managed to involve the entire community in fund-raising. He was the spearhead who convinced Armco workers, Middletown city employees and others to contribute by payroll deduction, urged businesses and individuals to contribute thousands, and ultimately raised $1.6 million in community contributions. That, coupled with a $1.2 million federal grant secured under Title

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I of the Higher Education Facilities Act, and a state appropriation of another million in the Ohio Legislature, made possible the first branch campus in the state, and initiated a pattern adopted by the Ohio Board of Regents as the formula for 28 other university regional or branch campuses throughout Ohio.

University participants also made a little history. Miami President John D. Millett became Ohio's first chancellor of the Board of Regents. Dean Earl V. Thesken presided over the further development of the concept with establishment two years later of Miami's Hamilton Campus, and then of a Dayton area campus in cooperation with Ohio State University which a few years later became independent of its university "parents" to become the Wright State University, rightfully identifying Dean Thesken as the father of branch campuses in Ohio.

The opening of Miami University Middletown in 1966 saw 30 full-time and 55 part-time faculty, four administrators, two librarians and 15 civil service employees, under direction of C. Eugene Bennett, the first campus director.

The first two-year associate degree program to be established was in industrial technology, followed quickly by programs in secretarial studies and nursing. The Gardner-Harvey Library reported it had $80,000 worth of equipment and in excess of 10,000 volumes on its shelves.

Today, Miami University Middletown Campus includes:

Logan T. Johnston Hall, a classroom-laboratory-office facility which also houses student services, a bookstore, administrative offices and a student Commons.

Earl V. Thesken Hall, headquarters for the campus technical programs, including Nursing, Business Technology and Engineering Technology.

Gardner-Harvey Library-containing more than 78,000 volumes, 6200 recordings and compact disks, 485 periodicals and 15 newspapers, plus 10,500 pamphlets and maps, and 20,000 instructional, print and audio-visual materials. In addition, the library is a partial depository for U. S. government documents and houses a collection of more than 36,000 titles. The campus computing center is located on the lower level of the library building.

Dave Finkelman Auditorium, a 749 seat fully-equipped facility site of concerts by the Middletown Symphony, performances in the campus Artist and Lecture Series, and programs by other CiViC and performing arts groups.

Verity Lodge-used for classes, meetings, displays and small concerts, and houses the campus child-care center, MUM's Tots, on its lower level.

Recreation Center/gymnasium, facilities for campus athletics, plus weight-training, a lounge and locker rooms.

Plans have been approved, and construction should begin this year, on enclosure of a patio area to become computing facility labs and classrooms, and for an addition to the recreation center/gymnasium to add classrooms and updated weight training and locker room facilities.

Currently, there are 59 full-time and 90 part-time faculty, plus 58 administrative and Civil Service employees. Dr. Michael P. Governanti is in his fifth year as executive director of the campus.

Miami Middletown provides lower division, pre-baccalaureate courses transferable to Miami's Oxford campus or to other four-year institutions; two-year associate degrees in accounting technology, business management technology, executive secretarial technology, computer technology/systems analysis, engineering technology, nursing, and general studies.

Its continuing education program offers a wide array of courses, workshops, and contract programs for personal and professional development, many in cooperation with area business and industry. For example, Continuing Education currently is conducting a major labor/ management training program on the automobile industry for GM-Harrison of Ohio in cooperation with Sinclair Community College.

Miami University Middletown students come from a variety of backgrounds. They are often first generation college students taking courses to acquire job skills and training, or to further their education to pursue upper division and graduate studies. About 55% attend on a part-time basis. Their average age is 26, and about 75 percent work at least part-time. All students commute to classes, since there is no student housing on campus.

The Middletown campus appeals to recent high school graduates who are undecided about a major or career choice, and who want to establish a firm academic foundation before completing a four-year degree. Many high school graduates find the variety of two-year associate degree programs that can be completed at Miami Middletown are compatible with their career goals. There is variety in course offerings, with mostly freshman and sophomore level courses offered during the day while upper division classes and some graduate courses are offered in the evening.

The campus boasts an active, collegial student body participating in more than two dozen campus organizations, and a host of student activities, including a campus radio station, newspaper, and Applied Sociology Research Center. The campus athletic program has won championships in the Ohio Regional Campus Conference in men's and women's basketball, women's volleyball, and the cheerleaders have won in state competition several years running. Campus sports include golf and tennis, in the Spring and baseball recently has been reintroduced as a fall sport.

The campus, committed to keeping pace with technology, has installed several fully computerized classrooms/lab, sophisticated audio-visual equipment for interactive teaching in the sciences and nursing.

The student support services include a full array of personal and career counseling, a learning assistance program with reading, writing and mathematics specialists on staff, plus peer and professional tutoring services. Special services are provided for the handicapped, and for veterans, and more than 100 students are employed each semester in on-campus jobs.

As Miami University Middletown moves into the decade of the 90s, it does so with resolve "to continue its emphasis on high quality, caring, teaching, advising, and counseling as a hallmark that distinguishes us from others," said Dr. Michael P. Governanti, Executive Director. "We have a tradition of self-renewal marked by a continuing pursuit of excellence by faculty, administrators, and staff. As in the early days of our founding, the challenges before us are many and great. More than any time in our history, we are being called upon to help our service region face the extremely complex challenges of living in an interdependent world in an increasingly technological information age. The need for up-to-date, quality higher education to empower our citizens to thrive rather than merely struggle to survive in the new age is great. Given our mission as a community-based, open door institution of higher education facing these challenges, it seems appropriate at this point in our history to turn our attention toward developing a shared vision of the kind of institution we want to be in

this decade and beyond. I am confident that together, the faculty, staff and current students at Miami University Middletown can continue our tradition of excellence and strengthen our campus community to achieve our important goals."

Dick Sollmann
Public Relations Director
Miami University
Middletown Campus
Middletown, OH 45042

Using Tests to Help Students Learn

Jerry Bergman

As is often said, college would be enjoyable if not for the need for tests. Much of this need is caused by the major purpose for which tests are now used, namely for producing grades and comparisons. Tests are seen by students as separate from, and not always helpful to, the college learning experience. Tests should become an *integral part* of every college course. Integration can be achieved if we use tests as a means of guiding learning. Before we discuss how this can be done, the concepts of summative and formative evaluation will be briefly reviewed.

Summative evaluation is used primarily to *summarize* a student's present performance level. This test type helps instructors to determine the level that each student has achieved in comparison with other students. The purpose of summative evaluation is primarily for grades or similar decision making concerns, such as advanced class placement. Formative evaluation is used *to help guide the student's learning*. For this use, the test is made an integral part of the entire learning process. An example would be where the student takes a quiz to help identify weaknesses. It thus can help to direct future studying so the student is better prepared for later exams. The test is not merely a measure to be used after a learning unit, but is an *integral part* of the whole learning unit itself. For this reason, formative evaluation requires that testing and evaluation occur *frequently* in the learning process. It then can provide study guidance, pointing out a student's performance shortcomings and and gaps in knowledge.

Pretests can be used and the results can be used to develop whole new learning units. A pretest can also serve as a final test: Those who pass it with a B or better are exempted from taking the second test (actually the posttest). This gives students a motivation for doing well on this test, and unless the grade is an A or B, only they know the results.

When I began teaching, I typically gave only a midterm and a final. Then, through student feedback and evaluations, most students indicated they preferred *regular exams* to help them better assess their progress. It also means that doing poorly on one exam was not as disastrous. I now utilize five to eight exams, many of which consist of about 40-50 multiple-choice or true-false questions. In this way, a small amount of material is covered at a time, and because as exams are more frequent, anxiety over them is lower. Also, the first few questions on each test are designed so that almost all of the students can answer them. This helps students develop a positive mind-set about the whole exam.

Learning tests have the clear advantage that the students completing them

knows *more* than when they began regardless of their score. It is also important to maximize the learning potential of *all* tests. One way to do this is to give students the answers *as soon as possible*. I always go through the results of the test with the students as soon as the entire class has completed the exam. The students mark their answers on *both* the answer sheet and the test booklet and use an answer sheet that can be handed in to be machine scored. They then retain the test booklet, which is graded and discussed in whole class as soon as the class is completed with the test. This method may be time-consuming, but is highly functional in helping students learn from the test. Correcting wrong answers soon after the test avoids the problem of reviewing in one's mind an unknowingly incorrect answer for a few days until one goes over the correct answer. Also, students are typically far less motivated to review test questions two or three days later. The questions are then not fresh in their minds, and most students are by this time far less concerned about the answers.

Another way that exams can be a functional part of the learning process is to use what I call the **three one-thirds method.** One-third of the questions are designed so that the answers are given either in the question or somewhere else on the test itself. If the student simply reads the test, these questions can be answered with little outside knowledge. An example would be to give background information for a question, and then ask a question relative to the material. Then, in another question (often several questions later to increase the challenge), I may ask questions on some of the information previously provided. Much new information can be introduced in this way, making the test a learning exercise. It works well because most students are alert and motivated when taking a test. The second one-third questions are designed to be answered successfully if the student is only *familiar* with the required material, or has reviewed the required exercise. Most students should get these questions correct, and the purpose is review and concept building. The last one-third are challenging questions, and this is the test section that is focused on for grading purposes.

Most any testing format can be designed to help students think about new relationships, look at old ideas in new ways, and evaluate previously learned material in new situations. A particularly useful type of this kind of exam is to present new material in the test questions and then require the student in developing their answer to *integrate* the new material with the material studied for the test. As students are usually highly motivated when reviewing new material on a test, they achieve more learning than in the ordinary class format.

One test which I have found extremely useful is called a **group solution test.** In this form, two or three students work together to produce the answers, and then they share the final grade. Group solution exams in many ways more accurately reflect reality than individual solution types because many or most of decisions in both the business and academic worlds are made in group situations. These exams provide students with valuable experience in developing solutions to problems in collaboration with others. They also have the advantage of being one of the few teaching techniques that tends to *equalize* original student differences. The student who already knows many of the answers will probably not learn as much from this experience as others, but one who is less skilled or less knowledgeable will likely greatly benefit. Group solution exams encourage students to learn from each other and also to produce a functional learning environment. Because most of the grades on this exam tend to be high and do not reflect individual differences, these exams are used only periodically and are not usually a regular part of the normal class exam diet.

Another important learning type of test is called a **performance exam.** For this type of an exam, the student must achieve some task which utilizes the skills which were learned from their textbook or class instruction. For a performance exam in a journalism class, the student may do a story of a publishable quality level. For a physics class, they may complete an experiment which is of a certain level of quality. This exercise could be designed so that the course concepts must be mastered to achieve the task. Most performance exams require the application of a wide variety of skills, and the instructor in evaluating the students work must identify and specify those skills which are of specific concern to the class.

Most students tend to think of exams as very isolated affairs at which a student works by him or herself, checking off answers or filling in blanks. The far more important exams are those in life—and most of these deal with work performance or performance in some other area, such as a hobby, a sport, or avocation activity. If more instructors used performance exams, it would help the school become more realistic and more relevant to the world of work. It would also help colleges to provide more preparation for life. The examples are endless – in electricity the final could be evaluating a circuit; in microbiology, completely carrying out steps to isolate, stain, and evaluate various pathogenic organisms.

Another learning exam type is the **open book** format, probably one of the most commonly used learning exams. They encourage learning by requiring students to apply their own thoughts and ideas in conjunction with the material found in the text or the reference used in class. They tend to be *more* dependent than most other types of tests upon innate understanding, self-expression skills, and the ability to reason. They are also far *less* dependent upon memorization and certain specific skills such as writing and spelling. Often in searching for the answers, the student will come across much information that is of interest. At the least, he or she will be exposed to much new material.

Take home exams can be graded to motivate students to maximize their performance. This format works well if questions are developed which force the student to, first of all, master the required material and, secondly, to apply it in some way (ideally realistic work or life situation).

By using a variety of exams, students who have learning difference are allowed to shine. Another useful method of helping exams become learning tools is to use **criterion-referenced** instead of **norm-reference measurement** where a student is not compared to the performance of other students but, for example, to his or her own *previous performance*. One student may earn an A in a class and learn very little, and another student can earn a C and yet learn a great deal. Thus, some teachers use the pretest and posttest format, and base the student's grade solely or largely upon *performance improvement*, not absolute performance. This is most useful for courses that are not in a student's major.

A learning exam typically involves using the exam to help the student develop his or her skills. To improve on this, for example, the first quiz could be on only certain aspects of the end performance that a student is expected to eventually achieve. For a journalism project, the student could determine what is required to evaluate the appropriateness of various sources of information. The requirements are delineated so that the student knows specifically what is necessary: twenty sources from scholarly journals, books, and magazines, and over one-quarter must be from primary sources. The next step might be for the student to list several ways, preferably by some type of check list so that the information can be easily evaluated. Some of these are: Is it consistent, and

reliable? Will it be accepted by the public? Is it controversial. Will it benefit its intended readers? The next steps might be the completion of an outline, then a rough draft, both which are graded. If a step is not done properly, it must be redone until it reaches an acceptable level. The last step is the completion of the final paper.

In my twenty years teaching experience, I have tried most every major testing innovation. The above are several of those that I have found successful in both helping students learn and in providing me with the needed feedback relative to my own teaching performance. All teachers soon find that their own preferred teaching style or format works best when a variety of evaluation techniques are used.

The essential step to insure that a testing program becomes an integral part of the learning and academic program is the *attitude* about tests that the instructor conveys to the students. The students need to realize that these tests are *designed primarily to help them* achieve a certain competency level, which is their goal for being in school. Students need to vividly understand that tests are like a Doctor's physical – they are specifically designed to diagnose *what is wrong* so that it can be remedied to ultimately help the person. Students should know that their compentency will often be evaluated after graduating. Oral quizzes called job or promotion interviews, or even formal tests as used by groups such as government civil service and the army for hiring and promotion, are almost universal. Many students go on to graduate school or become certified in some profession – all which require more testing. Many professions require periodic recertification to maintain professional standing and credentials, necessitating some kind of testing.

Unfortunately, especially at the two-year college level, we tend to over-emphasize the verbal skills and underemphasize non-verbal abilities of students. Performance exams are often not used partially because they are more expensive, time-consuming and require more resources to complete in terms of materials, time, and cost. If we are serious about improving our educational enterprise in America to be more competitive with the world, one area that we must focus upon is probably the most neglected, the process of evaluation and using it to help students grow and learn.

Dr. Jerry Bergman
Instructor
General Studies Division
Northwest Technical College
Archbold, OH 43502

The Federal Supplemental Loans for Students Program: A Bad Bargain for Public Two-Year Technical and Community College Students

Charles Rubin, Jr.

Introductory Comments:

Federal student loan programs continue to receive national attention and debate, given the continuing increases in student loan default rates. Congressional concern will continue to generate legislative and regulatory activity aimed at stabilizing and reducing student loan defaults. Regulatory trends, as evidenced by the Department of Education's June 1989 default reduction initiatives, now place substantial accountability for student loan defaults on higher education institutions.

During the past three years, attention has been focused on the enormous growth in the volume of borrowing under the Supplemental Loans for Students Program (SLS). As reported by the College Board in February, 1990, much of the recent demand for SLS loans has come from proprietary trade schools and defaults in this sector of post-secondary education are three times higher than in collegiate institutions; proprietary trade school borrowers, in fact, were reported to comprise 85% of SLS loan defaulters in 1989. The increased scrutiny brought on by these defaults, combined with higher interest rates and no deferment of interest payments, make SLS loans the last resort for two-year public school students.

Key Features of the SLS Loan:

In order to draw conclusions about the importance of SLS loans for two-year technical and community college students, a brief description of the loan and a comparison with other federal loans for student borrowers are presented below:

A. What Is an SLS Loan?

Supplemental Loans for Student (SLS) are for *student* borrowers and are made by participating lenders such as banks, credit unions, or savings and loan associations. SLS loans have variable interest rates that are adjusted each year. An independent student may borrow up to $4,000 per year, with a maximum debt ceiling of $20,000.

B. Comparison of the SLS with Other Federal Loans for Student Borrowers:

Characteristics	SLS Loan	Stafford Loan (Guaranteed Student Loan)	Perkins Loan (NDSL)
Interest Rate	Variable: Rate adjusted each year. Current rate: 12%	8% for first four years of repayment. 10% thereafter	5%

Characteristics	SLS Loan	Stafford Loan (Guaranteed Student Loan)	Perkins Loan (NDSL)
Loan Limits	• Up to $4,000/ year to a maximum of $20,000 of total debt.	• up to $2,625/year for first and second year undergraduates.	• up to $4,500 for first two years of under-graduate study.
		• up to $4,000/year for third and fourth year undergraduates.	up to $9,000 for third and fourth year undergraduate study.
		• Maximum of $17,250 to complete four year undergraduate education.	
Loan Deferment & Repayment Grace Period	Repayment of loan principal can be deferred. Repayment of interest begins 60 days after loan disbursement.	Repayment can be deferred as long as student is enrolled at least half-time. Repayment begins 6 months after student graduates, leaves school or ceases half-time enrollment.	Repayment can be deferred as long as student is enrolled at least half-time. Repayment begins 9 months after student graduates leaves or school.

The differences in these federal loan programs, particularly with respect to the interest rates, deferment options and repayment grace periods, indicate that prudence and due care must be used in the selection of the SLS loan as an educational funding source for public two-year technical and community college students. Several considerations comprise the basis for caution.

Important Considerations for Financial Aid Advising and Packaging:

The following factors, when taken together, serve to reduce the importance of SLS loans as an educational funding source for students attending public two-year technical and community colleges:

A. Comparatively Low Costs of Attendance:

The costs of attendance at public two-year colleges are relatively low when compared to four-year private and public colleges and universities. This fact permits the non-debt sources of financial aid to cover a substantially greater portion of college costs, thereby reducing the need for students to incur debt at the public two-year college. Moreover, the intent of a student to transfer to a four-year college increases the importance of minimizing debt at the public two-year college, since the four-year college will certainly be more expensive and loans will likely be a necessary educational funding source.

B. The Student Financial Aid Population:

Financial aid recipients at public two-year colleges, particularly urban community colleges, are, on average, older than the traditional eighteen to twenty-two-year-old college student. Most are independent females attending parttime, and many are female heads-of-household, with minimal financial resources, who are working either fulltime or parttime. Enrollment patterns may change from term to term, with many students dropping out temporarily for personal reasons and circumstances. Typically, students take about five years to complete a two-year degree program.

These student characteristics make debt the least desirable way of financing college costs, since the expiration of loan grace periods requires the student begin repayment of the loan regardless of whether the student's educational objective has been achieved.

C. Student Eligibility and Need for the SLS Loan:

Before a student can receive a loan under the SLS Program, the student's eligibility for the Stafford Loan and Pell Grant must be determined. To the extent that the student is eligible for the Stafford Loan and the Pell Grant, the amount a student can receive under the SLS Program is reduced. Thus, the amount a student can borrow is limited to the cost of education at the institution less the amount of all other aid received.

Since eligibility for the Stafford Loan and Pell Grant must be determined before a student can receive SLS funds, and the combination of a Pell Grant and Stafford Loan, packaged with the Ohio Instructional Grant (OIG), a Supplemental Educational Opportunity Grant (SEOG) and a College Work Study (CWS) award will fully or substantially cover the costs of education at public two-year colleges, the SLS is not an essential educational funding source at these institutions. The exceptions may be students who already have a bachelor's degree, since these students are not eligible for the Pell and Ohio Instructional Grant programs. Thus, for needy students, the SLS Loan can often be avoided.

D. No Right to Defer Interest Payments under the SLS Program:

Unlike the Stafford and Perkins Loan Programs, SLS student borrowers have no right to defer the repayment of both principal and interest while they are enrolled. While repayment of principal can be deferred under the SLS Program, payment of the interest begins 60 days after the loan is disbursed. Failure of the student borrower to make these interest payments, whether or not the student is enrolled, results in loan default. Thus, an SLS borrower could go into default within the same year the loan is made. The institution has little control over its default rate under these circumstances and the likelihood of default is increased. Further, the SLS interest rate (currently 12%) is significantly higher than both the Stafford Loan interest rate of 8% during the first four years of repayment and the Perkins Loan rate of 5%.

Summary:

In light of increasing loan default accountability being placed on higher education institutions by the regulatory authority of the Department of Education, and given the compelling reasons for minimizing the amount of debt incurred by students attending public two-year technical and community colleges, the student loan should be the last resort as an educational funding source.

Compared to the other federal student loan programs, the SLS loan is not a good bargain for public two-year college students for the following reasons:

- The SLS loan has a substantially higher interest rate than the Stafford and Perkins Loans.
- The student borrower has no right to defer interest payments while enrolled, resulting in a greater potential for loan default and increased risks of a higher institutional default rate.
- The SLS loan is not an essential educational funding source for needy public two-year college students, given the low costs of attendance, the availability of federal and state grant funds, the availability of College Work Study as a self-help funding source, and the existence of alternative and more attractive federal loan programs.

Charles Rubin, Jr.
District Director
Student Financial Aid & Career Services
Cuyahoga Community College,
Eastern Campus
Warrensville Twp., OH 44122

Using the Feasibility Study to Promote a Communication Strategy in Technical Writing

Terry White

One of the most valuable exercises I have used in my Technical Writing classes is the feasibility study, a formal report which requires every student to develop a plan to encompass a situation (a definition, by the way, of rhetoric itself). The idea of the feasibility study is that it will put a student through several kinds of rhetorical paces in a learning situation that does not debase the experience into mere simulation, a feature of many current technical writing textbooks that emphasize "what-if" situations or which require the student to pretend to be a troubleshooter, mid-level company executive, or technician. I have a modest pedagogical quarrel with this assumption and it is that the student is expected to put on the fictive construct of a *persona* however realistic the simulation, and we have thereby aggravated the student's task with the freight of another anxiety before a complex assignment.

Why the feasibility study? I make this assignment worth one-third of the student's grade in the course to justify the time and effort I expect students to put into it. Furthermore, I require an oral presentation of the report which is

videotaped before the class and which is followed by a brief question-and-answer session. In this way, students know that a peer appraisal is coming up and that they will have to justify their efforts. We share this sociable trait with all our students: No one wants to look foolish in public and especially before the camera's cold eye. There are some students who will express something short of stark horror at the idea of being taped for posterity (next year's Technical Writing class will view the preceding year's performances); normally, the first few presenters will dissipate this fear and set the pace. This is, of course, the reason why I gently coerce the initial presenters into going first.

I make the guidelines simple. I ask each student to find a problem related to work, school, or community life that he or she can solve. Each problem will generate its own internal questions, but I ask students to apply these questions at the outset: Is the problem worth investigating? Can anticipated solutions/recommendations be effected within a reasonable period of time? Is the proposal cost-effective?

Because the parts of the formal report are discussed in the text and because I require certain parts to be in all student reports, such as the Summary, Letter of Transmittal, Reference, and Appendix, I allow students time to get familiar with the standard report format and to do some preliminary investigation. A minimum number of secondary sources will ensure that the Library will be consulted, but the majority of sources are primary and require students to listen carefully and record information as they gather it. Therefore, students' reference sections owe more to face-to-face conversations with experts and technicians and telephone conversations with busy executives; lately the FAX machine has begun to show its influence in the bibliography. Through continual adaptation of working premises, students acquire flexibility, a sharper sense of purpose, and discernment among potential audience levels implicit in their investigations.

The Integrative Approach

No other assignment requires as many skills: critical reading, observing, gathering data, formulating possible solutions to a problem, writing for selective emphasis, and presenting this information cogently in written and oral forms. Most importantly, technical reporting in a feasibility study requires a student to make a real, not merely realistic, professional judgment. If the problem investigated is worthy of the student's time, in all likelihood the student will work harder than he or she normally would if the problem were "fixed" beforehand by the academic parameters of the textbook itself.

I have noted that this most challenging of writing tasks is often implicitly denigrated by the standard format of chapter-ending assignments appended to many texts nowadays. Again, I have no big quarrel with those that require a discerning purchase between useful appliances or bicycles or the construction of toothpick towers. I believe, however, that these aim too low for the most part or are simply alien to a student's practical experiences or professional expectations. Many of our students will have no other formal preparation in technical writing and correspondence beyond this class. Many will find themselves writing "professionally" as trainees or entry-level staff in rigorously demanding situations, such as internships in the social welfare bureaucracy, before graduation itself. The norm is two years' coursework in our associate degree programs, and a majority of our students defy traditional classification. Women re-entering higher education in numerous technical and semi-technical professions comprise a high percentage of our students at Kent-Ashtabula. Their

anticipated writing tasks are ones that generally require the skills necessitated by investigative and evaluative kinds of reports. On the other hand, traditional technical writing classes frequently fail to find a common denominator precisely because the classes are so liberally mixed with students from nursing, social services, engineering and business-related programs. Throw in the odd liberal arts or journalist student, and the art of teaching to the middle of the herd disintegrates.

Technical texts themselves differ widely, almost idiosyncratically. The apparatuses for teaching the skills of the feasibility study will vary extremely from book to book. The instructor has to be cautious about guidelines in preparing the students to tackle a problem that is significant, yet not global; challenging enough to require formal documentation from a variety of primary and secondary sources; "feasible" in the strict sense that any problem's "solution" be effected within, say, a year's time; and cost-effective in the simplest of senses (it should not cost more to fix the problem than the problem itself costs). Questionnaires and surveys must be checked for integrity of sampling-any quantifiable data, with or without recourse to the computer's assistance, must hold its own in the world of fact. Fledgling number-crunchers are taught Disraeli's maxim. (There are three kinds of lies: Lies, Damned Lies, Statistics.) But, without doubt, the most important service the feasibility study can render is in the doing: The student must come to a subjective judgment and present it in the time-honored way of all scholarship: no logical fallacies, rhetorical blemishes, or imprecise terminology. Correctness and precision have taken a back seat to fluency in these latter days of deconstruction, but we ought to remember that the vast majority of prospective employers have never heard of deconstruction or reader-response. But they will invariably demand precision. My own discovery is that the student will rise to the occasion; the majority will perform adequately, and a few will surpass my expectations in each class.

I have found it useful to insist upon a modest public defense of students' topics at the outset for two reasons: It prompts the malingerers to get moving in the right directions, and it reinforces the positive value of peer pressure so that, after a few minutes' worth of fielding questions, a student has a more efficient appraisal of the scope of the study in the "real" world, or he or she can be turned around before a local problem unmasks itself as global in origin.

I have also found it useful to restrict topics to three generalized areas of investigation: problems that belong to or affect the student's own workplace, the immediate environs of the campus, and the community-at-large.

Here are samplings from two semesters' classes for each category:

Workplace

Integrating Male Child-Care Staff at the Ashtabula County Children's Services
Establishing a Personnel Manager's Position at Saybrook Giant Eagle
Modernizing Sear's Auto Center
Establishing a Designated Smoking Area at Molded Fiber Glass Company
Networking PCs to the Main File-Server System at Transplastics
Replacing the 3' x 6' Flat Sheet Press with a 4' x 8' Self-Unloading Press

Campus

Establishing a Child-Care Center at KSUAC
Designing, Producing, and Circulating an On-Site Campus Newsletter
Implementing a Sprinkler System at KSUAC
Making KSUAC's Parking Lots Safer
Establishing a Smoke-Free Environment at KSUAC
Establishing a Weightlifting Facility at KSUAC
Protecting University Data Files at KSUAC's Computer Center
Improving KSUAC's Admission Figures by Advertising

Community

Introducing 18-Year-Olds as Sponsors for Ashtabula County's Big Brothers/Big Sisters
Updating or Removing Five Traffic-Control Devices in Ashtabula
Building A Four-Field Softball Complex in Ashtabula
Attracting 18- to 25-Year-Olds to Work for the American Red Cross of Ashtabula County
Establishing a Bike Trail from Conneaut to Geneva

Ancillary Benefits

The majority of papers serve to connect the student to the realities of technical writing in ways that only experience itself can provide. Some topics will, unfortunately, degenerate into secondary reports despite the promises of their titles. Conferences will keep the instructor apprised of progress more than progress reports, which become **pro forma** exercises after a while and do not reflect the actual problems or barriers the student may be facing nearly as well as face-to-face sessions. Out of classmates' earshot, students are less prone to equivocate about the real progress they are making. They will expect an instructor's help.

Sometimes papers come to fruition in ways gratifying to all. For example, the student's proposal to establish a newsletter on campus was soon abandoned after some fact-finding and surveying of student population indicated that neither equipment, facilities, nor volunteers were forthcoming; however, his modified topic became a reality for the on-campus student paper when an advertising manager's position was opened to students in accounting technology, and the onus of soliciting money, writing business correspondence, and related tasks became the job description of an interested student (payment in two hours of course credit).

Another student discovered that flex-time at the student's place of work was not desired by the majority of co-workers and that the paper had to modify its direction after that surprising fact was revealed to her in a questionnaire.

Sometimes the oral presentations of feasibility reports reveal how much resistance students encounter in sampling opinions on subjects that border on controversy. The workplace is where students need to use communications skills at their most sophisticated level. The student whose paper proposed bringing male workers into residential female housing discovered much antagonism to the idea by a supervisor; another, who proposed the designated smoking area, confronted newly formulated company policy banning smoking and found himself on the carpet in the president's office, his job at risk.

Many subjects that strike chords of national controversy can sometimes be modified into workable proposals; others lose touch with realistic guidelines and have to be discarded–these are often beguiling by the newsworthiness their titles generate. Two examples will illustrate Anabolic Steroid Testing for Ashtabula Area City School Athletes and Banning Machine Guns from Ashtabula County. In both, the litigation factors became insurmountable for the students involved.

Exceptional Circumstance

On occasion a student will propose a topic in which he or she has a vested interest: The student may intend to expand a hobby into a business or start one soon after graduation. Once an audience level is worked out (that includes the instructor as evaluator), these studies will often prove valuable to investigators and classmates alike; generally, they will make greater demands on the student's time than subjects without a high personal interest. There is one problem that may occur, however: Students tend to lose a sense of objectivity when they believe they are simultaneously initiators of their projects and sole decision-makers on its feasibility; no lapse in correctness or tone should occur if the conference is planned for this contingency.

Supporting Research

One does not have to look far afield for research that advocates using critical tools such as the feasibility study to enhance communication skills. Joan Gailey, in OATYC's fall 1989 *Journal*, notes that our two-year students stand in special need of an integrative curriculum that combines the best of a technical education with liberal arts scaffolding: "For those students pursuing technical/associate degrees who have no desire to continue their education, it may be the only opportunity to integrate the curriculum in ways that foster critical thinking, problem solving, creativity, and decision-making ("Technical Studies Should be Taught through an Integrative Approach," 11-14).

Rita Bova, writing in the preceding issue, would concur, for she calls for technical writing instructors to use a range of methods that will help technical students to overcome the fear of writing because of the misperceptions they may have between writing-as-process and writing-as-product: Using process in technical writing rather than emphasizing the 'product'; concentrating on individual method rather than results; and showing 'how' to do rather than 'what' to do are the ways we can accomplish this mission ("Reducing the Fear of Technical Writing," OATYC *Journal* 14.2 (1989): 10-13).

The fall and spring issues of *The Journal of Business Communication* (1989) contain titles illustrative of the importance of communications skills that are necessary in professional life but rarely taught in formal classroom settings; the majority document years of research on such skills as effective listening (cf. Sypher, Bostrom, and Seibert, "Listening, Communication Abilities, and Success at Work," *JBC* 26.4 (1989): 293-303; also Judy C. Nixon & Judy F. West, "Listening: Vital to Communication," *The Bulletin* 52.2 (1989): 15-17). Videotaping the feasibility study is, I am convinced, one of the best ways to teach interpersonal communication skills because of what each student can learn about his or her own level of performance (see Gordon E. Mills & R. Wayne Pace, "What Effects Do Practice and Video Feedback Have on the Development of Interpersonal Communication Skills?" *JBC* 26.2 (1989): 159-76).

Conclusion

It seems to me that no literary anthology is remarkably superior to any other I have seen come my way in recent years; yet choosing the "right" technical text is extraordinarily difficult and usually unsatisfying because of the interdisciplinary complications of this course. Its challenge is precisely what makes it worth some risk, and the feasibility study is what has made this course satisfying pedagogically. As confirmed by student evaluations, this assignment takes precedence over the effective resume and job application letter as the most rewarding skill learned from the course.

Terry White
Assistant Professor of English
Kent State University
Ashtabula Campus
Ashtabula, OH 44004

PLUS ONE

General Education: In Search of Facts

Lawrence Locke

General Education has always been difficult to define and necessary facts regarding it have been hard to come by. Lawrence Locke in his article "General Education: In Search of Facts," discusses three areas of current research that might help better define General Education's role in a particular curriculum and General Education as a whole. (Permission for reprinting "General Education: In Search of Facts," Change, *July/August 1989, was granted by Heldref Publications, Washington, D.C. 20016).*

For all the intellectual firepower trained on the topic of general education, there is a positive dearth of factual information about its actual conduct on campus. It is gratifying, then, to find new, research-based data emerge in recent months and hear that more is on the way. Several researchers have made recent forays into the collegiate practice of general education, returning with news that is interesting in itself and heartening for its availability.

Six studies deserve mention.

Two of them perform the most basic task of inquiry—to describe the subject as it exists today. A Penn State survey by Marilyn Amey, Alexander Chen, James Fairweather, and William Toombs details changes in general education requirements over the past 15 years. Another study, by Alexander W. Astin, Eric L. Dey, and Sylvia Hurtado of UCLA's Higher Education Research Institute (HERI), turns to that multipurpose document, the college catalog, to furnish information about general education's main curricular dimensions.

Three other UCLA studies—also by Astin, Dey, and Hurtado—take another tack, attempting to determine the effects of general education. Though not definitive, the three studies confirm several important, commonplace assumptions and happily suggest that there may be more facts where these came from. Indeed, another assessment of general education outcomes is already underway at HERI.

Finally, Virginia Smith at the Society for Values in Higher Education (SVHE) has in progress a study designed to find out how general education programs work. Her survey of chief academic officers at all U.S. colleges and universities has been followed by visits to selected campuses to study general education programs in action.

All of these studies were funded by grants from the Exxon Education Foundation.

What Is General Education?

Starting at the start, Toombs and his associates at Penn State set out to capture general education's profile in the '80s; their data comes from a sample of all four-year institutions (N = 546). Required credits in general education, they found, have changed in a number of ways over the past 15 years. In 1988, general education requirements comprised 37.9 percent of total degree work, up 4.5 percentage points from 1974. Though still well below the 43 percent required in 1967, the recent increases suggest at least that the community has been paying more attention to general education.

After a decline from 33 percent in 1967 to 20 percent in 1974, mathematics requirements have increased sharply. Nearly 65 percent of the institutions studied now require at least three credits of math-related coursework.

Speaking and writing have come back strong, too. In 1967, 90 percent of institutions required some work in these skills, a figure that declined to 72 percent by 1974. Today, 85.5 percent require at least six credits of work in these basic communication skills.

The bottom line: general education has regained lost ground as its share of degree work rises; a good part of that new ground consists of required work in fundamental skills.

Mining College Catalogs

The HERI effort complements the Penn State study by examining how general education programs differ among institutions. Astin, Dey, and Hurtado mined the catalogs of 284 four-year colleges and universities and found three basic types or approaches to general education. Course distribution systems accounted for the lion's share (93 percent) of institutions. A distant second and third were major-dominated programs (5 percent), in which each major field establishes its own general education requirements, and specified interdisciplinary core curriculum programs (2 percent), in which every student must take the same body of courses.

Because course distribution systems clearly hold sway, the impression may be that general education is a uniform, practically monolithic entity. But a closer look at institutions with distribution systems reveals many variations within the device. The investigators used factor analysis to identify four distinct dimensions along which general education programs may be ranged.

- **Progressive.** Stand-out programs on this dimension stress more recent additions to traditional liberal education such as women's and minority studies (such an emphasis often is marked by fewer requirements in the humanities).
- **Personalized/Individualized.** This dimension characterizes programs that are more likely to require individual research, a senior thesis, comprehensive examinations, freshman seminars, and examinations with written evaluations.
- **Integrative/Interdisciplinary.** Programs that require interdisciplinary courses, integrative senior seminars, field study, and internships reflect this dimension.
- **Structured.** Programs embodying this dimension provide students with little or no choice of courses.

These findings are novel and provocative. But do they matter? How do these dimensions affect the quality of education offered to students? This question of the relationship between approach and outcome is, of course, the most difficult of all. A next stage of the HERI research takes a first shot at answers.

Outcome Data: Scratching the Surface

Statistical data on the effects of curricula on student outcomes are scarce. Two HERI studies address this question by taking readings on various barometers that appear to measure college outcomes.

In the first study, Astin, Dey, and Hurtado set out to identify broad factors that affect general education outcomes. To identify useful, empirical data on the efficacy of different approaches to general education, Astin and his associates began the study with 97 environmental measures, including college size and selectivity, fraternity/ sorority membership, a part-time job off campus, a full-time job, place of residence, need for financial aid, contact with faculty, and independent research.

As subjects, 2,465 students were surveyed in the fall of 1983 when they entered one of 187 four-year colleges or universities offering major liberal arts programs; in the fall of 1987, these students completed a follow-up questionnaire.

The HERI research group drew on its 1987 follow-up questionnaire to devise 24 outcome measures. These ranged from problem-solving skills and speaking and writing abilities to tolerance, confidence, a philosophy of life, and political affiliation. Half the students were pretested when they entered college as freshmen; the rest completed in 1987 retrospective reports on changes they perceived in themselves since their freshman year.

Conclusions:

- General education outcomes appear to be influenced by a wide range of student experiences in college. Consistent with previous research, the second most important factor facilitating student development is contact with faculty members. A part-time job on campus runs a close second.
- Almost every other form of *student involvement* also seems to facilitate general education outcomes, including living on campus, strong study habits, and participation in independent research, honors programs, and extracurricular activities.
- Holding a full-time job off campus, frequent television watching, and living at home are negatively associated with general education development.
- Other than leadership ability, most general education outcomes are highest among students who devote a lot of time to studying and homework.
- General education appears to be facilitated at small, private, nonsectarian liberal arts colleges and hampered at large public universities.

In a second and most recent study, Astin, Dey, and Hurtado attempted to apply these learnings about environmental factors to their typology of general education programs derived from catalog study. First findings demonstrate that there are indeed distinct *curricular* effects that can be identified, independent of student background or institutional characteristics. "Major-dominated" general education, for example, tends to enhance speaking and writing abilities and preparation for graduate school, but not abilities to work independently. The "interdisciplinary core" approach fosters liberal political outlooks, but not math ability.

A Caveat

These data offer food for thought, if taken with a grain of salt. Factors like "student involvement" may very well be associated with general education *outcomes*, but this is not the same as saying that a given general education *program* will lead to those outcomes. Environmental factors at work on campus may have as much relationship to a college's idea of general education as buttered popcorn has to a good movie.

In the third HERI study, Sylvia Hurtado separately analyzed UCLA student transcripts to assess the effect that particular courses have on cognitive-outcome measures. Her sample consisted of students who had entered college in 1981 and who had later had their Graduate Record Examination (GRE) scores sent to UCLA. Pretest benchmarks were students' SAT scores; GRE verbal and quantitative scores served as posttest outcome measures of "cognitive growth."

Her findings show that students tended to enroll in courses emphasizing skills they *already* possessed. Not surprisingly, given that course-taking pattern, students concentrating on the humanities demonstrated poor quantitative-skill outcomes, and students involved in math and science exhibited poor verbal skill outcomes. In a laissez-faire curriculum, these students are likely to strengthen already-strong skills and neglect their weaker ones.

The danger, again, in these studies is that a quick reading will confuse general education *outcomes* with general education programs. The studies reviewed here point out characteristics of institutions and programs that affect outcomes. But, of course, they don't tell us what specific outcomes follow from particular programs.

Forging that link—between outcomes and specific course and program characteristics—is the next step, and it is well underway at UCLA. Astin and his associates have now developed new research instruments to measure both programs and outcomes, and they've assembled a sample of 50 colleges and universities (and invite others) whose programs and students will be the subjects of a 1989-90 study, also funded by the Exxon Education Foundation.

How Does General Education Work?

The third area in which researchers are currently trying to uncover information is that of understanding how general education actually accomplishes its goals in specific campus contexts. How does it work? Virginia Smith's investigation for the Society for Values in Higher Education is at mid-point. She has completed a survey of the chief academic officers of all colleges and universities in the United States, two-and four-year, and currently is in the midst of a follow-up schedule of campus visits. Her findings thus far:

- Earlier studies have categorized general education programs by their curricular design ("interdisciplinary core," for example); for purposes of judging quality and outcomes, however, categorizing approaches by rationale or purpose may make more sense.
- Expressed purposes differ remarkably across institutions, and may not be widely shared within. Many rationales, emphasize skills—for upper-division work, a chosen profession, lifelong learning, and so on.
- The organizational status of general education is shaky. Only 3 percent of all institutions have an officer whose primary administrative responsibility is for general education; even committee oversight is a sometime thing. In many institutions, the "general education program" seems an artifact of the catalog.
- With over 50 percent of freshmen in two-year colleges, these institutions provide a big part of all general education. What purpose and outcomes do

community college deans aver for their offerings? "High transferability." Does that rationale serve fully or well?

• Most general education programs seem designed for a stable student population progressing as a cohort through successive years of study. Only in a small number of cases (selective liberal arts colleges), though, is that assumption warranted; at most institutions, only 25 to 40 percent of the entering student body completes degree work at that same school. For general education planning, this should be a fact of first significance.

• Chief academic officers, when asked about chosen instruments for improving general education, most frequently pick faculty development. What investments in that activity make sense?

While their individual value varies, the academic community has reason to be encouraged by all of these studies – not because they will underpin a grand scheme for the rejuvenation of general education, but because they remind us that, in a field much given to quick judgements and well-intentioned rhetoric, a solid base of empirical information remains the springboard to intelligent change.

Lawrence Locke
Higher Education Writer
Scarsdale, NY 10583

PRACTICUM

A Study of the Instructional Methods in the Introduction to Psychology Classes at Columbus State Community College

Jonnie H. Budke
Judith D. Gentry
Garfield A. Jackson

Columbus State Community College conducted a study to determine if the instructional methods used affected student mastery of course content objectives in its Social and Behavioral Sciences Department. The study compared the effectiveness of computer assisted instruction (CAI) and traditional instructional methods. The study was conducted because information on the effectiveness of CAI vs. traditional instructional methods was considered essential for the planning and delivery of a quality educational program that meets students' needs, insures content mastery, and meets the general education outcomes of CSCC. While both traditional and CAI methods of instruction resulted in significant improvement in what students learned, there was no significant differences between the two methods. The Behavioral Sciences Department faculty of CSCC share the study.

Introduction

Review of Literature

Computer Assisted Instruction (CAI) is a relatively new approach in which the pioneer efforts occurred around 1960 following the introduction of

computers into higher education. With CAI, an instructor uses a computer to provide course content instruction, usually in the form of drill and practice, tutorials, and simulations.

In **DRILL AND PRACTICE**, a type of repetitive "flash card" approach emphasizes learning by rote memory. Historically, this method has been used at all educational levels (Chambers, 1983).

TUTORIALS provide question-and-answer, dialogue-type learning utilizing the computer as a tutor. Like drill and practice, the method has historically been used at all education levels. On a computer, programs make use of graphics and animation and present the information on specific topic(s). Following the presentation of the material, the computer questions the student about the information. When the student correctly answers the question, the computer then provides more advanced material for consideration. If at any time the student incorrectly responds to the question, the computer presents the correct answer and requires the student to enter the correct answer through the keyboard in order to proceed (Chambers, 1983).

SIMULATIONS, the third type of CAI, provide a model in which the student plays a role and interacts with the program providing an opportunity for the student to apply knowledge. Simulations have been used most often in higher education to model scientific processes. They are applicable to any field, however, and can be of significant help in illustrating concepts, in helping students to develop problem-solving techniques, or in allowing students to explore complex interactions (Chambers, 1983).

Additionally the literature identifies GAMES as another form of CAI. Games are used extensively in schools of business across the country and provide an opportunity for learning to occur by simulating a business environment in which the student must make knowledgeable business decisions in order to "win" the game (Chambers, 1983). Games are often described as a variation of simulations.

In the United States, drill and practice, tutorials and simulation are the three types of programs which fall under the rubric of Computer Assisted Instruction (CAI), Computer Based Training (CBT), Computer Based Instruction (CBI), or Computer Based Education (CBE). In Europe and elsewhere, these activities are usually referred to as computer-assisted learning (CAL) (Chambers, 1983).

Computer assisted instruction satisfies many of the theoretical requirements for a "good" learning environment advanced by learning psychological theorists such as B. F. Skinner (Dixon, 1984) and Benjamin Bloom (Gannon, 1986). CAI involves the individual learner actively in the learning process, permits the learner to proceed at his or her own pace, and reinforces a correct response immediately.

Although hundreds of experiments using micro-computer based CAI are occurring throughout the world, we still do not have a definitive answer to the question "How effective is CAI when compared to traditional classroom instruction?" A literature review reveals there are two schools of thought on the effectiveness of CAI. One group of researchers suggests that CAI should be significantly superior to traditional classroom instruction (Kulik, 1987). The second group of researchers conclude that instructional method will not make a significant difference on student achievement because motivated students will compensate (McKeachie, 1986). McKeachie in a review of literature on instructional methods concluded that differences in teaching methods makes little differences in examination scores. He states that "larger and smaller classes, lectures and discussion, and other comparisons of teaching methods show few significant and consistent differences."

One other finding from the literature assisted us in designing and implementing the study as well as day-to-day curriculum and instructional planning. Instructors sometimes assume that the ideal learning situation is one where each student might work individually at his or her own pace, with his or her own equipment and with individual help. However, the traditional instructional practice of pairing students to work in a laboratory setting has been found to have good instructional and economic justification when working with CAI. At the Third International Conference on Improving University Teaching both Fukuda of Japan and Elton of England reported that in computerized instruction students learned more effectively when two students shared a computer terminal rather than when they used separate terminals (McKeachie, 1986). Such "peer" learning has both motivational and cognitive elements.

Goals and Design of the CSCC Study

The literature review led us to design a study in which each student would serve as their own control, using a pre/post test exam to measure mastery of content objectives in "Introduction to Psychology" courses at CSCC. The natural experiment did not assign students, instructors or instructional methods to experimental or control groups. The assessment of content objectives was done to determine "value added" by instruction in a unit on learning theory.

Because we found that research on college teaching and learning is inconclusive about the comparative effectiveness of CAI, our goal in the present study was to obtain data on the effectiveness of CAI to assist us in determining, in part:

1. How well we are educating our students.
2. How and why successful teaching strategies work.
3. The relationship, if any, of outcome assessment and which outcomes are desirable and obtainable in a discipline specific course.

Methodology

All sections of Introductory Psychology classes taught at CSCC Autumn Quarter 1988 participated in the study. Prior to participating in the study each student was asked to sign a consent form. Of the fourteen classes in the study, eight met during the day, five during the evening and one on Saturday mornings. Two classes were taught at off-campus sites, and half of the classes were taught by full-time and half by hourly instructors.

Each instructor was asked to teach the material as usual in his or her classes. The traditional methods included a range of lectures, overheads and class discussions. The nontraditional approach also included lectures, overheads and class discussion with the addition of computer simulations to support instruction in classical, operant and latent learning. To minimize the likelihood that students were familiar with the content prior to instruction, the instructional unit on learning theory was selected. The unit on learning theory contains highly specific vocabulary and content, and is one with which most students are unfamiliar prior to formal instruction.

The assessment of content objectives was done to determine "value added" by instructional methods in a unit on learning theory. Pre- and post-tests each consisted of twenty multiple choice items drawn from the regular test-item file used by full-time psychology instructors. All items had been classroom tested. Each item was compared to the learning objectives and the pre- and post-tests were balanced to insure that each of the learning objectives for the unit was tested.

CAI approach utilized computer simulations on operant and classical conditioning from McGraw-Hill's *Psychworld* program (1985) and latent learning from Worth's *Psychsim* program (1987) were used in the computer laboratory in Aquinas Hall. Students were assigned to the computers in pairs, matched whenever possible so that an experienced computer user shared the computer with an inexperienced user. Sex differences and attitudes towards computers were not explored.

Three out of 7 instructors of 42.9% of the faculty used the computer simulations in their classes (66% of the full-time faculty and 25% of the hourly faculty). One hourly faculty member teaching at off-campus locations followed his usual procedure and had the students travel to main campus to complete the computer simulations.

Analysis

A total of 328 students completed the pre-test and 285 completed the post-test. The 269 students who completed both the pre- and post-tests were included in the matched-pairs statistical analysis. More than half of the students in the study (55.8%) received traditional instruction. A two-way analysis of variance was completed using a two-factor mixed design for repeated measures on one factor. Statistical analysis included computation of means and standard deviations for the pre- and post-test pairs selected for detailed analysis (Table 1). Instruction was found to significantly affect the mastery of course content as reflected in the comparison of pre- and post-test results, $F = 545.42$ ($p<.001$). Results also indicated that CAI does improve students' scores on content mastery but not significantly more than traditional instructional methods, $F = .949$ (n.s.).

Table 1

Comparison of Effectiveness of CAI vs. Traditional Instructional Methods

Source	SS	df	•5	F	p
Total	5471.6	537	–	–	–
Between Ss	1495.96	268	–	–	–
Non-Trad/Trad	5.29	1	5.29	.949	n.s.
Error	1490.66	267	5.58	–	–
Within Ss	3976	269	–	–	–
Pre/Post	2667.65	1	3667.65	545.42	<.001
Pre/Post x Non-Trad/Trad	.03	1	.03	.006	n.s.
Error	1308.30	267	4.9	–	–

Summary and Conclusions

The findings indicated that instruction made a significant difference in the mastery of content objectives in a unit of Introductory Psychology, as measured by pre- and post-test administered in all psychology classes during Autumn Quarter, 1988 at Columbus State Community College. Students' achievement of content objectives did not vary significantly based on instructional methods used by fulltime and hourly instructors. CAI is as effective as other methods in contributing to student achievement as measured on content-based exams. The

goals of the study were to encourage faculty members to rethink the way in which they teach, to encourage students to become active learners and to collect data on new instructional strategies as they are implemented.

The following recommendations are made for further study and implementation of CAI at Columbus State Community College:

1. All psychology instructors supplement traditional classroom instruction with computer simulations as a means of involving learners in the process, and as a way of varying classroom activities.
2. Computer simulations be integrated into other courses and disciplines in the Social and Behavioral Sciences Department.
3. Further study be made of student satisfaction variables and student attitudes toward computers and CAI instruction.
4. Further study take place that provides more detailed information on the effectiveness of CAI in other areas of psychology.

Jonnie Budke
Judith Gentry
Garfield Jackson
Behavioral Sciences
Columbus State Community College
Columbus, OH 43215

FORUM

Issue: Do Today's Two-Year College Faculty Members Need the Protection of a National Union?

One of the burning issues in two-year education is "the need" or "no need" for a union – a third party to handle the differences of faculty and administration. As the two-year colleges matured, on many campuses the inequalities increased in number and size. Many faculty senates were afforded little power for change or redress. Problems concerning such things as pay, workload, grievances, leave, tenure and benefits went as proclaimed through senior administration and Board of Trustees – out of reach of the faculty. While on other two-year campuses, faculty, through collegiality, remained an integral part of the policy making decisions. Thus collegiality versus adversity as contending means; Joseph Barnett and Ed Lamp debate the issue.

Members Need the Protection

Joseph H. Barnett, III

I strongly support the position that today's two-year college faculty members need the protection of a national union.

First and foremost, financial and technical resources are provided to the two-year colleges by a national organization which support local efforts to negotiate and to maintain an effective and dynamic bargaining agreement. An ill-informed and financially weak local may be perceived as powerless and not taken seriously by college management.

Two-year college faculty members should depend upon the legislative efforts which are directed and coordinated by experienced lobbyists who know how to interpret constituent needs and what to do to get these needs addressed at both state and national levels. A national union will adopt and pursue a legislative agenda as AFT/OFT has done for two-year colleges in Ohio.

National and state organizations have the resources to communicate relevant information, transfer knowledge, negotiation skills and human relations techniques to local affiliates requisite to their needs. Institutes, seminars and varied training sessions must be provided to local members and a national union can deliver these requirements.

A national union can provide the essential training of locals to do everyday labor relations activities. Training of local members promotes leadership at each college, helping them overcome the perception that "an outsider has entered our social inner sanctums and is meddling where they do not belong." It is critical that the local leadership take an active role to curb such a misconception and to demonstrate that it is the local members who are working to provide local solutions to local problems.

It is also equally important that local labor leaders do not fall into the "super-server" syndrome and think they can do it all by themselves. There is too much to do and too little time to do all that needs to be done. Let's not forget–we are educators first!

Joseph Barnett, III
Business Department
Terra Technical College
Fremont, OH 43402

Really Not the Question

Ed Lamp

To "unionize" or "not to unionize" is really the question before us. It is my belief that the two-year college faculty needs to be connected to a national union, only for purposes of improving the broad spectrum of education at the local level. However, recent experience indicates that most locals seek the national network because of labor/management problems with administration.

My answer to the question of need for national unionization is "no." There is no need for any outsider to help or to represent either the faculty or the administration at a two-year college. This statement is qualified with the understanding that it applies only when the faculty is totally dedicated to the educational goals of the college, and they need not be concerned with the environmental in which they work, or the pay they get for the job.

The two-year college faculty does not need the protection of a national union as long as the administration applies good management and communication skills, is totally dedicated to the same educational goals as the faculty, and is not spending most of its time putting more fabric into its own golden parachute.

No national protection is needed when administrators lead the faculty through innovative, creative, equitable and effective management practices. They should remember all the ideas for management and improvement they had when they were on the "other side;" and apply those same basic skills that are being taught in "business management" into their own academic worklife.

When all the players on this education team are doing their jobs, as described in their job descriptions, it is my opinion that the two-year college faculty does not need the protection of a national union.

Ed Lamp
General Studies
Terra Technical College
Fremont, Ohio 43402

REACTION

Reaction to "Whips, Chairs, and Other Motivational Teaching Tools"

The Journal *encourages letters and articles in response to its contents, policies and to OATYC activities. Judith Ohles reacts to and comments on Ron Luce's "Whips, Chairs, and Other Motivational Teaching Tools"* (OATYC Journal, *Spring 1990*).

Judith K. Ohles

In the Spring 1990 issue of OATYC, Ron Luce presents a thoughtful and compelling argument for what he calls a "student-centered classroom." The article introduces recommendations for improving teaching that are insightful; however, the premise of student-centered instruction could be taken even farther.

In his 1982 book, *Megatrends*, John Naisbitt stated that one of the ten directions transforming our lives was the shift from an industrial society to an information society–a society based on the creation and distribution of information. Due to all the information available and the increasingly rapid rate at which information is being produced, it is more important than ever that students take a pro-active stance towards their education. While faculty have the main responsibility of educating students, other members of the campus community can help these faculty members fulfill their responsibility more effectively. They may also enhance faculty's teaching role. Academic advisers, directors of media centers, writing labs, tutoring programs, computer centers, and career development centers, and librarians could become "co-educators" with teaching faculty to help teach students how to learn, not simply how to memorize information.

Students often feel overwhelmed by the search for knowledge. However, to be successful in this "Information Age" that Naisbitt defined for us, students need to learn techniques: searching for information and ideas; evaluating the information found; and integrating information and ideas from a variety of sources. Teaching faculty, together with the other campus co-educators, can teach students the skills needed to become self-directed, or active, learners. These skills will not only help them in their academic careers, but will also make learning more exciting for them and will help them achieve success in their professional and personal lives.

Why not expand the workshop? As an academic librarian (a co-educator), I would be excited about the possibility of attending and participating in a

workshop such as the one described by Luce. Teaching faculty and the campus co-educators could attend a half-day to one-day workshop or retreat to share ideas and determine how to best approach students with motivational teaching tools. Academic advisers and directors of writing labs or tutoring programs could let faculty know the typical problems students encounter, and what methods would be most effective in providing students with knowledge necessary to succeed in their classes. Directors of media centers could describe the benefits of using media in the classroom, not just for class periods, but also as supplementary learning material for individual student use. Directors of computer centers could talk about computer-assisted-instruction programs and their possible uses as well as any benefits of such programs to classroom learning. Directors of career development centers could stress the benefits of proactive learning in a student's future career, and could also indicate the types of independence and initiative in finding information that employers like to see in their employees. They could continue by explaining the types of information-seeking skills that students may need in the "real world." Librarians could discuss how a comprehensive library instruction program could help students become skilled in the search for information. They could introduce the library as an ideal place for students to become involved in active learning by becoming skilled at searching for information. Faculty together with these other educators could form a powerful alliance, working together to create not only student-centered classrooms, but student-centered campuses, with teaching and learning occurring in nearly every facet of a student's academic experience.

The first two years of college are a crucial time to teach students these learning skills. The goal with such a comprehensive program to encourage students towards showing independence and initiative in their learning is to provide them with knowledge, information, data, and skills that will became the foundation for any subsequent learning skills needed in academia. Such an effort will also provide students with the lifelong learning skills necessary to perform well in their professional and personal lives.

I applaud Luce's efforts, and envision for our campuses an even greater effort to improve teaching skills and motivational techniques throughout the curriculum and the campus community. The campuses could then work towards producing students who are active leaders–students who are ready to continue their self-directed learning, whether in furthering their academic careers or in their professional or personal lives.

Judith K. Ohles
Librarian
Kent State University,
Stark Campus
Canton, OH 44720

The Editorial Board of the OATYC Journal *is soliciting written responses (three or four paragraphs) to the question* ***Are faculty mentoring programs effective?*** *The response should address one of the many possible perspectives. Here is your chance to participate, and the Board encourages you to do so. As determined by the Board, the best responses will be published in the next edition's "Forum" section,* **deadline: March 8, 1991.**

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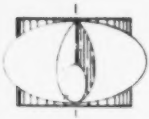

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"A Salute to Our Armed Forces"

Vol. XVI No. 2 Spring 1991

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- Affiliation with the American Association of Community and Junior Colleges and its activities throughout the nation.

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- To provide a forum in which all state-assisted, two-year campuses can meet to discuss and resolve mutual problems;
- To foster cooperation and communication among Ohio's institutions of higher education;
- To provide the viewpoint of the state assisted, two-year campuses to the Ohio Board of Regents and to the State Legislature;
- To identity and improve the status, prestige, and welfare of all state-assisted, two-year campuses in Ohio;
- To cooperate with other Ohio agencies, colleges, and universities in research and activities that promote the effectiveness of higher education in Ohio;
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JOURNAL

OF THE
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(Affiliate of the American Association of Community and Junior Colleges)

VOL. XVI NO. 2 **Spring 1991**

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The Ohio Association of Two-Year Colleges
c/o Russell K. Davis, III
University of Akron Community and Technical College
304 East Buchtel Avenue
Akron, OH 44325

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COMMENT

A Time for Renewal and Change

Jim Marcotte

Spring – a time for renewal and change a time for growth. The change and growth of spring are not just in the outdoors, but it is also a time of change and growth of new ideas and roles within the two-year college system.

The 2+2 Tech-Prep concept is expanding across the state with new monies being made available from the Perkins grants. This program will provide articulation to college for Parnell's "Forgotten Majority" the vocational and general high school student. The two-year college will become the access route for the average student who will need an increasingly technical education beyond high school in order to compete in tomorrow's world.

The "transfer module" has been mandated by the state. This module would guarantee transferability to all Ohio's state colleges for two-year college students. Again providing access for those students who begin college in a two-year college - many of them being poor or minority students who might not otherwise have been able to begin college.

In this time of growth and change for the two-year college system, there is a need for the state to provide the monies needed to see the ideas brought to fruition. We are being asked to become more things to more people and yet the governor has already announced that he plans to cut education spending and specifically spending for higher education.

Spring is a time of growth and change, but it is also a reminder of how some things remain the same. The OATYC must continue to be an active participant in helping the two-year college system meet these changes, new ideas and roles.

Jim Marcotte
OATYC President
Cincinnati Technical College
Cincinnati, OH 45223

INFORMATION FOR PROSPECTIVE CONTRIBUTORS

The *Journal* encourages submission of material for any of its sections by faculty, staff, administrators and/or trustees of any of Ohio's community, general and technical, junior, regional and technical campuses. The *Journal* is particularly receptive to articles of general professional importance in the areas of administration, instruction, and baccalaureate or technical studies for two-year institutions.

There are forty-four solicitors of editorial material listed here. Contact your campus solicitor or one nearest you to inquire about submitting a specific manuscript.

Manuscripts must be typed, double-spaced and of approximately 1,000-3,000 words in length. All submissions must be accompanied by a stamped, self-addressed envelope for return. Art work must be black and white. Photos glossy; tables and drawings on 8 1/2 by 11 paper. The name and address of the contributor should be on the back of all art copy.

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The *Journal* reserves the right to edit manuscripts to meet its needs and objectives. Where major revisions are necessary, every effort will be made to clear the changes with the author.

Submission deadline for the next *Journal* is September 18 , 1991.

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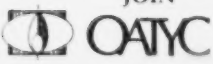

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TEXT

FOCUS: Kent State University, Geauga Campus
A Campus Involved in the County's Economic Development

Robert C. Peterson and Larry D. Jones

This spring we visit Kent State University's Geauga Campus. The campus, located in Burton Township, Northeastern Ohio, has dedicated itself to the economic development of Geauga County. Robert Peterson and Larry Jones jointly introduce us to the campus.

For twenty-five years, Kent State University - Geauga Campus has provided educational opportunities and a university environment for citizens of rural Geauga County. The campus is the only institution of higher education in the county and, as such, has been a catalyst for intellectual and cultural growth in the area.

As part of recent campus mission definition and planning efforts, an important facet of the campus will be to develop programs and services that enhance the economic development of the county. To meet that goal, the administrative structure has been reorganized and plans put in place to make the campus a prominent player in county economic development matters.

The Campus

Located in the small town of Burton, the Geauga County Campus is one of seven regional campuses of Kent State University and is the smallest two-year institution in Ohio. Even though the credit enrollment has more than doubled in the last four years, total enrollment is still under 600 students. The campus offers the freshmen and sophomore courses toward many of Kent State's baccalaureate programs as well as associate degree programs in accounting, business, and computer technologies. Also, selected junior, senior, and graduate courses are offered to meet special needs of the area.

The campus began as a night center in 1964 at the West Geauga High School. In 1967, enrollment prompted the opening of a day center in Chardon,

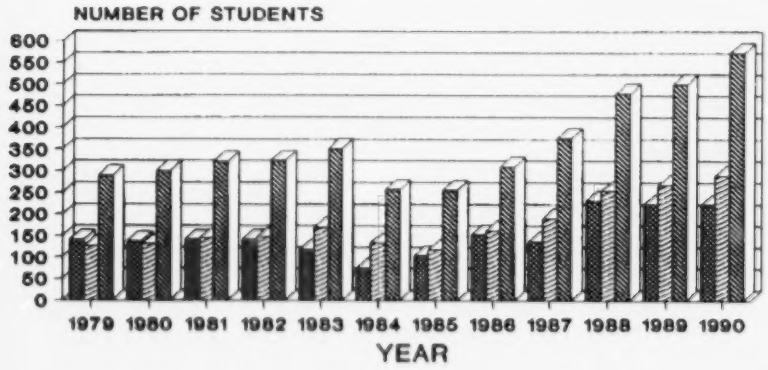
Single building site

the county seat. By 1969, many of Geauga County's leading citizens had decided that a permanent facility was desirable. It was at that time that B. J. Shanower stepped forward to offer his 87 acre farm north of Burton as a site for the campus. By April, 1970, the necessary approvals had been attained to build a campus at the Burton location. The campus first opened it's doors for classes at its new permanent site in 1976. The campus is a single building facility that totals 33,000 square feet. It was originally built to accommodate 500 students, slightly less than the current enrollment. However, with space being devoted to computer laboratories in response to current technology trends, the campus is somewhat overcrowded, particularly in the evening.

The Geauga Campus experienced serious enrollment problems during the mid-1980s. However, the administration and county residents maintained faith in the campus throughout those bad times. Through improved marketing the enrollment topped 500 last year and hit 573 this fall.

KSU GEAUGA ENROLLMENTS

Fall Semesters 1979 - 1990



As the campus continues to grow, it strives to retain its atmosphere of personal attention and friendly service. That atmosphere was a major factor identified by students in a recent survey conducted to determine the degree of satisfaction with their educational experience. A recent Computer Technology Associate Degree student emphasized that, saying "Owning my own business is something I've always dreamed of and, with the education that I received at Kent Geauga, I've reached that goal. The quality of instruction was excellent. The personal contact with the professors was the most important advantage of attending a small campus. All learning did not take place in the classroom lectures. Some of the most important and useful things I learned happened over a cup of coffee in the lounge with my instructors . . . . many of them I'm proud to call my friends as well."

The campus has also increased efforts recently in the integration of computer technology throughout the curriculum. In addition, staff and faculty have been trained in the use of computers as productivity tools. To meet these

needs, two local area networks (LANs) have been installed at the campus. One network supports three separate student labs with a total of 45 computers. The other network supports campus employees. All administrators, staff members, and full-time faculty members have their own computers on the network. With this technology, the campus is using electronic mail and file sharing capabilities to approach a "paperless office" environment and present a "high tech" image to the community it serves.

Computer class

The County

Geauga County is very rural, yet steadily growing in population as it continues to develop as a bedroom community of Cleveland. During the last few decades, there has been a significant net immigration of middle-age professionals with families. The county's population is much better educated than the surrounding region or state (21% of Geauga County residents have 4 or more years of college). Geauga County also has the highest per capita income in Northeast Ohio.

Geauga County is the location of many small-to-medium sized industries. These industries are relatively new, with 85% of them formed after World War II. The average number of employees in companies located in the county is less than 60, with the largest one employing 800 people. The major products include plastic, fabricated rubber, fabricated metal, and industrial machinery. These industries were able to support a 53% increase in manufacturing employment between 1970 and 1986, while the overall region had a 30% decline. It is these industries that the campus has targeted as its market for programs and services.

1990 Economic Factors That Will Affect Educational Programs

A number of anticipated economic trends will have a tremendous impact on educational programs in the 1990s. The United States population will not grow nearly as rapidly during this period of time as it has for the past forty five years. Some estimates show that employment growth during the next fifteen years will

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be about half of what it had been the past fifteen years. However, because of the rapid growth over the past 45 years, a considerably greater portion of the population will be in the 25-55 age group, the primary income earning group, causing an increased demand for goods and services. It is estimated that this age group will hold three out of every four jobs.

There will be more minorities in the workforce, especially African-Americans, Hispanics, and Asians. Women will continue to increase in the workplace, taking approximately two-thirds of all new jobs filled. There will be fewer workers in the 18-24 and over - 55 age groups, causing some concern over who will fill the entry level positions, and concern over the loss of experienced workers when people take early retirement.

There will be increased emphasis on jobs requiring education during the 1990s, with the executive, managerial, professional and technical fields requiring the greatest amount of education. Many of the current people in the workforce will need to update or upgrade their current skills, with many others having to learn totally new skills. According to some estimates, a person will have to renew work skills totally every 7-10 years throughout his or her career. In contrast, those jobs requiring little formal education will continue to dwindle, with opportunities for persons with less than a high school education becoming increasingly limited.

With the increasing use of technology in the workplace, there will be greater emphasis on the reading, writing, and mathematical skills of American workers. With the United States ranked 49th in the world in literacy, these skills will need to be upgraded considerably if U. S. industries are to compete in the global marketplace.

Much of the growth in the number of jobs is going to come from the smaller businesses, those employers with 400 or fewer employees. Perhaps as much as 70-90% of all new jobs will come from companies this size, since these are the organizations which are able to adapt more quickly to changes. However, due to their size, these organizations are not able to have their own training departments and are noted for looking outside for their training and education needs.

All of these factors will have an impact on the types of educational programs offered during the 1990s. A regionally based institution of higher education can have a significant impact on the economic development of the geographic area it serves. Likewise, increasing a campus's role in such activities can have a very positive effect on the campus's own growth and prosperity.

Important Campus Contacts

For the Geauga Campus to become more involved in economic development activities in the county, several key contacts were important to develop. Those contacts included people, agencies, and organizations. The following contacts were critical: Geauga County Commissioners, Office of Community and Economic Development, Office of the Job Training Partnership Act (JTPA), Private Industry Council, Western Reserve District of the Ohio Industrial Training Program (OITP), Job Service Employers Committee (JSEC), Ohio Bureau of Employment Services (OBES), and business and industry chief executive officers.

Redirecting the Focus

The campus now develops programs, courses, and seminars that meet defined needs in areas that enhance the opportunities for success in local business and industry. Rather than developing a schedule of non-credit courses in hopes that the public finds it attractive, the campus functions as a consultant by providing a needs-assessment service, following up with proposals for programs targeted at meeting those defined needs. When possible, those proposals include using credit courses as the means of meeting needs.

In refocusing the campus toward economic development efforts, the first step the Geauga Campus took was to form a continuing Education Advisory Board. This Board was comprised for human resource persons from several of the leading businesses in the County and the director of the County Department of Economic Development. When the prospective board members were approached regarding serving on the advisory group, we indicated that the campus was interested in working with the economic development of the county: would they assist us in this endeavor? With that philosophy, it was hard for prospective members not to be interested in helping. The Board gives feedback regarding needs and interests of various businesses in the county, who to contact, and a variety of other concerns.

The first program, started at the suggestion of board members, was a monthly breakfast series revolving around the businesses in the county. The program has been named the Geauga Economic Leadership (GEL) Series. Each month a different business, industrial, or service organization is "spotlighted." The organization typically presents its history, examples of the types of products or services it produces, its future plans. This program appeals to a number of different people depending on the business being spotlighted, but it also gives businesses the opportunity to come to the campus, many for the first time. The

campus just started its fourth year of this program and attendance generally runs 30-40 each month, providing an excellent vehicle for making contacts with businesses and for receiving feedback regarding how the campus can better serve the needs of local businesses.

Seminars were developed on a variety of topics relating to the local businesses. The first seminar was on economic development within the county, from the local, state and federal perspective. Representatives from the county and state offices of economic development and Congressional representative's office made presentations on the future economic development of the county. The campus also offered a seminar on the international philosophies of business management, particularly the European and Asian philosophies. A seminar on recent changes in the tax code as it affected businesses was also presented.

The campus also offers job placement services to the local businesses, encouraging the hiring of both full-time workers from among the recent graduates and part-time workers while they are students in school. A program offering job search skills, career counseling, and job placement for persons over age 55 was also developed to meet a need defined by JTPA.

Small class sizes a plus

Other programs were developed to meet the training needs of local businesses and industries. Some of the programs were custom developed, while others were put together with credit courses already being taught at the University. The emphasis was to get businesses to view the campus as a training component for the development and upgrading of their employees. Courses in computer software application, accounting, supervision, and even training in a foreign language have been offered both on-site at companies and at the University.

The campus also offers free needs assessment services to companies needing help with a variety of problems. Faculty from the campus help with computer

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systems problems, accounting difficulties, writing business plans, and training staff. These services provide many avenues for interaction with local businesses and industries.

Future Developments

As the educational needs of the local businesses and industries continue to grow, so do the programs responding to those needs. The campus is currently attempting to receive a designation as a small business development and enterprise center by the state. This designation would allow the campus to work with new business startups in assisting with writing business plans, developing marketing plans, and financing plans, as well as a variety of other services which could be provided, including developing a business incubator.

The campus has installed a satellite dish and will be offering teleconference programs for local businesses and industries on a variety of topics, allowing local exposure to national programs for a minimal cost, exposure which has not been previously available to small companies in rural Geauga County. A job fair will allow students at other colleges and universities who are from the area to interviews with local businesses so they might return to the area following graduation. That program is meant to address a problem local employers have expressed regarding competing with larger companies for qualified prospective employees.

Dean congratulates graduate "with distinction"

Conclusion

During the process of campus planning, it is important to develop a focus for efforts that will support the campus mission and meet the needs of the

community being served. At the Geauga Campus of Kent State University, in addition to maintaining quality in credit programs already offered, that focus has been defined as serving the economic development needs of Geauga County. Through those efforts, the campus hopes to enhance county business and industry ability to prosper in the emerging global economy.

Graduates - 1990

Although there is nothing unique about this approach, with the small size of the campus in consideration, it is very important to focus efforts on only those programs that relate to the county's economic development in order to meet defined needs with timely, quality programs rather than trying to be all things to all people. At the same time, the campus continues to foster an environment of personal attention and friendly service. At Geauga Campus, "SMALL IS BEAUTIFUL."

Robert C. Peterson
Director of Technical Training
Assistant Professor, Business Technology
Kent State University, Geauga Campus
Burton Twp., OH 44201

Larry D. Jones
Dean
Assistant Professor, Computer Technology
Kent State University, Geauga Campus
Burton Twp., OH 44021

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Narrowing the Gap between Engineering Technology and Local Industry

Edward W. Lazor.

Introduction

Do you know what is expected of your technology student graduates? Industry's requirements have changed dramatically in the past ten years. Here are the findings of an industrial survey and some ideas should you want to survey your local industry needs.

I conducted a survey of Salem, Ohio area industries to establish the degree of demand and also the educational background needed for electrical and electronic technicians. The surrounding area is predominantly rural and the majority of industry is made up of small companies. The results of the survey indicated that some revisions had to be made to the Kent State University Salem Regional Campus Electrical/Electronic Technology course material in order to include subjects relevant to industry's needs.

Purpose for Conducting the Survey.

The purpose of the survey was to investigate industry's job skill requirements for electrical/electronic technicians. From the information gathered, there would be review and modification, if necessary, of the Kent-Salem Electrical/Electronic course material.

Survey Questionnaire

I developed a survey questionnaire (Appendix A) and used it to interview the electrical and electronic supervisors in selected local and surrounding area industries. (Local area refers to Columbiana and Mahoning counties plus the city of Alliance in Stark county.)

The terms "electronic" and "electrical" as used here need to be defined. The term "electronic" denotes any system that includes transistors or electron vacuum tubes, such as computers, digital systems, or analog systems. "Electrical" denotes all the remaining systems, such as motors, mechanical relays, electrical heating, lighting, and power distribution.

Procedure for Conducting the Survey

The industries selected came from the *Ohio Harris Directory*. The directory is a compilation of businesses listed by geographic location, alphabetized by city name and county areas. Also, each business for a particular geographical location is listed alphabetically. The information for each business contains address, telephone number, officers, key management personnel, number of employees, year established, annual sales and type of business activity by description and coded by a Standard Industrial Class (SIC) product grouping number.

I first screened the directory to delete from consideration those companies whose business activities obviously did not lend themselves to the study. Industries finally chosen were limited to companies of twenty or more employees, with annual sales exceeding one million dollars, and with medium-to-heavy industrial or fabrication type business activity. After careful consideration, twenty-two companies were chosen for the survey. I contacted each company by telephone and gathered most of the survey information by telephone interview with contact personnel. I interviewed several in person.

The interview followed the questionnaire format with few exceptions. If in the course of the discussion the interviewee indicated the company did not have any electrical/electronic personnel nor would they likely have any need in the future, I terminated the interview. If it did employ electrical/electronic personnel the interview continued. The interview focused on questions concerning the type, quantity and degree of sophistication of equipment presently being maintained or operated by these employees. Questions also asked about the technicians' educational requirements.

Survey Results

Of the twenty-two companies contacted, four companies did not employ electrical/electronic personnel, one hired electronic personnel responsible for electronic maintenance separate from electrical (electrician) related work, two employed electrical persons for product assembly only, and one company surveyed utilized electrical and electrical/electronic persons for providing service work to other industries. The remaining fourteen did not differentiate between the electrical/electronic classification.

The study further showed that local industry is greatly dependent on heavy machinery using both AC and DC motors. Most of the AC motor control circuitry is the traditional relay logic, while DC motors are used where variable speed is required, especially on overhead cranes. A few companies had replaced relay logic with Programmable Logic Controllers (PLC) and in some instances, PLC's had become a part of their finished product.

One company replaced variable speed DC motors with adjustable frequency AC drives, sometimes referred to as AC Industrial Drives. AC Industrial Drives control the speed of highly efficient and economical three-phase synchronous motors by electronically production variable frequency three-phase power. PLC's and AC Industrial Drives involve highly sophisticated electronics.

Those companies with machine shops are beginning to adopt Numerical Control (NC) and Computer Numerical Control (CNC) machines. Several companies using machined parts in their final product had been using CNC's for a few years. Technicians working with CNC's must have in-depth knowledge of electronics and microprocessors to perform maintenance on them and a strong mathematical background to program them.

At this point, very few local companies used process controllers or computers in their production process, but microprocessors and other sophisticated electronics are beginning to appear in the control circuitry of newly purchased equipment.

A revelation of the survey was the fact that many of these companies (8 out of 18) utilized electricians to maintain electronic equipment. Only one company (1 out of 22 surveyed) hired "pure" electronic technicians. According to one supervisor, "Our technicians can be trouble shooting electronics equipment today and replacing a 41,600 volt transformer tomorrow."

Another revelation was that few technicians, whether electrical or electronic, have a technical college education. In many instances, technical personnel were long-term employees transferred from non-technical positions because of hobby interests or they were hired with vocational/technical backgrounds. In many cases their total education consisted of training provided by vendors on specific pieces of equipment. Several supervisors remarked that they need and would like to hire more technicians, but hiring freezes and austerity measures kept them from doing so. One supervisor mentioned that his company had employed

electronics technicians as recently as three years ago, but with the economic down-turn, the technicians were terminated as an economy measure and had not been replaced. All interviewees indicated they would hire two-year college degree persons to fill technician positions if the opportunity arose.

Finally, I received unsolicited positive feedback from many interviewees. They were impressed and pleased that a local educator was interested in their needs to have qualified technical personnel. Most indicated a desire to continue the dialog in the future.

Kent-Salem Electrical/Electronic Technology Curriculum

The Kent State University Engineering Technology curriculum follows fixed guidelines as set forth by the Engineering Technology Curriculum Committee and described in the catalog course descriptions. I believe the courses currently being offered are adequate; therefore, there was no proposal to make any major course content changes. Yet the survey revealed that certain areas of each of the courses, some more than others, should be adjusted to contain additional topics.

For example, after the survey, the industrial controls course was revised to include most of the "traditional" circuitry mentioned in the survey results. The textbook was replaced with one that included subjects such as AC and DC motors, motor controls, and transformers plus relevant topics such as SCR's thyristors, and solid-state relays. In addition, it emphasized three-phase power because of its extensive use in industry to power large motors and electric furnaces.

Furthermore, the survey revealed that PLC's are becoming an important "high tech" tool in local industry. Allen Bradley programmable controllers, therefore, were purchased for use in conjunction with the new text. To achieve the goal to make the student's education relevant to today's work world, all electrical/electronic courses in the curriculum utilize computers as a tool.

Two courses that have been part of both the Electrical and Mechanical Engineering Technology curriculum for three years are Computer Integrated Manufacturing and Robotics and Flexible Manufacturing. These courses are in a continuing state of development in order to update them with current information. Such courses equip graduates with experience and knowledge that will help local industry cope with the emergence of Computer Aided Drafting and Design (CADD), Computer Aided Manufacturing (CAM), Computer Numerical Control (CNC), Robotics, Group Technology and Statistical Process Control.

In addition to the fundamental Electrical/Electronics Technology courses, the student must take two technical mathematic courses and two technical physics courses as well as mechanical drafting. Computer programming courses in both BASIC and Pascal are also required.

Many of the supervisors commented on the need for communications skills for any future employees. The students must take courses in English, technical writing, speech and at least five semester hours from liberal education requirements.

Conclusion

The survey indicated that local industrial companies continue to rely on traditional technology and will probably continue to do so because of the nature of heavy manufacturing. Area industry has begun to utilize more and more sophisticated electronic technology with each new equipment purchase and will require trained technicians to run and maintain that new equipment.

The curriculum for electrical/electronic engineering is weighted towards electronics, computer programming, and computer hardware; however, the traditional topics such as ladder diagrams, AC and DC motors and motor control must also be a part of our teaching. Many of today's "smart" machines being purchased by industry use microprocessors to control and make decisions. A heavy emphasis, therefore, is on microprocessor and microcomputer technology in the two semester microprocessor courses.

Manufacturing companies are turning more and more to the new Computer Integrated Manufacturing (CIM) technologies. The Engineering Technology graduate must be ready to assume the responsibility of those job skills and, hopefully, in some cases be able to introduce this new technology to local manufacturers.

This survey helped to bring the Electrical/Electronic Engineering Technology program more in line with local industries needs. A similar study could help narrow the gap between your program and industry in your area.

SURVEY DATA COLLECTION DOCUMENT
KENT STATE UNIVERSITY
Edward W. Lazor

Company Name _____

Address _____

Contact Person _____

Title _____ Department _____

Questionnaire:

1. Does this company employ electrical engineers? Yes _____ No _____
2. If yes, please indicate educational level. Degree _____
   Non-degree _____
3. Does this company employ electrical/electronic technicians? Yes _____ No _____
4. If yes, please indicate education level. Degree _____
   Non-degree _____
5. What are the educational requirements for hire?
6. What are the continuing educational requirements?
7. Do the electrical/electronic technicians hired by your company work with any of the following:

   A. ELECTRICAL MOTORS Yes _____ No _____
   1. Specify type. AC _____ DC _____

2. Does the work entail . . .
   a. Designing circuitry?
   b. Repair?

B. ELECTRONIC CONTROLS Yes ____ No ____
1. Specify type.
2. Does the work entail . . .
   a. Designing circuitry?
   b. Designing systems?
   c. Repair?

C. COMPUTER-AIDED DESIGN & DRAFTING (CAD) Yes ____ No ____
1. What type of hardware system is used?
2. What type of software system is used?
3. Does the work entail . . .
   a. Electrical drawings?
   b. Other?

D. PROCESS CONTROLS Yes ____ No ____
1. Specify type?
2. Does the work entail . . .
   a. Designing circuitry?
   b. Designing systems?
   c. Repair?

E. FACILITY POWER DISTRIBUTION Yes ____ No ____
1. Specify type.
2. Does the work entail . . .
   a. Designing circuitry?
   b. Designing systems?

F. HEAVY MACHINERY Yes ____ No ____
1. Specify type.
   (i.e. lathe, press, rollers)

G. COMPUTERS FOR CONTROLS Yes ____ No ____
   (i.e. IBM pc or compatible)
1. Describe.

H. NUMERICAL CONTROLLERS Yes ____ No ____
1. Does the work entail . . .
   a. Programming?
   b. Repair?

I. PROGRAMMABLE LOGIC CONTROLLERS Yes No

1. Does the work entail . . .

a. Programming?

b. Repair?

J. INDUSTRIAL ROBOTS Yes No

1. Specify type and quantity.

2. Does the work entail . . .

a. Programming?

b. Repair?

OTHER COMMENTS OR OBSERVATIONS:
Does the electrical/electronic technician work directly with the electrical engineer?

Edward W. Lazor
Instructor
Electrical/Electronic Engineering Technology
Kent State University, Salem Campus
Salem, OH 44460

The Plural "I"

John Fallon

Donald Murray, in *A Writer Teaches Writing*, told of a student who complained to him: "I feel as if I'm teaching myself"; and Murray responded "Exactly" (76). This approach to the teaching of writing, as something that can be learned but not taught can create an uneasy alliance between teacher and student because of the demands it places upon the writers in the composition classroom to make sense of their writing for themselves. After all, Murray "conceives of writing as an unteachable act" (Berlin. *The Writing Teacher's Sourcebook* 54); and upon discussing this encounter with his writing student, Murray went on to describe his first experience teaching composition as one in which he "floundered" and continued to flounder even after his first course (76). I am familiar with this emotion because I usually experience it at least a few times every quarter.

My experience of "floundering" was especially acute in my first term as a teaching assistant at Ohio University; the knowledge that was gained from this dialectical approach to the teaching and learning of writing, as discussed by Murray and developed by Coles, allows the students to make connections between themselves and their writing that would be impossible to arrive at any other way. I reached this conclusion after an especially difficult and challenging encounter with my writing class during my first term as a teaching assistant at Ohio University. In this encounter a student's essay was deliberately misread by another student, and this misreading became an opportunity for the class to better understand ourselves as writers and as individuals.

For that first term as a teaching assistant, I was assigned a freshman composition text, Ross Winterowd's *The Contemporary Writer*, and I was free to create my own syllabus provided I met the department description of the course objectives. As did the other TA's, I assigned pages from Winterowd. In class, we performed the suggested writing exercises at the end of each section. Though I relished the aura of legitimacy that the text, any text, provided, I was quite uneasy about my approach simply because it wasn't my approach at all, just an adaptation of Winterowd's to my classroom. While I was reading Peter Elbow and Ken Macrorie and any number of expressivist composition instruction theorists in the hopes that I could find an approach in which I could believe, that a fellow TA who was working on his Ph.D. and teaching technical writing recommended I take a look at William E. Coles, Jr.'s *The Plural "I."* I finished reading it in the second week of the term and realized that here was an approach to the teaching of writing that I could believe in, a methodology I could honestly work with, and at that point, I dropped the syllabus we had been working with and adopted the Coles approach.

The Coles approach is characterized by extensive writing on the part of the students. In *The Plural "I"* Coles had his students write thirty essays for the term; in our class we wrote an essay for every other class which amounted to eighteen essays over the remainder of the term. Our only text for the course was the students' writing, samples of which I copied and handed around for class discussion each day. I was little prepared for the resistance to the learning of writing according to a dialectical methodology that, as Berlin puts it in his article "Contemporary Composition: The Major Pedagogical Theories," was "designed to lead both teacher and class . . . to the discovery of what can be known but not communicated" (54). In a Colean classroom, the students are required to do their own learning and supply their own information for their text. In a sense the students rely on their own "experience" to shape their responses to the assignments (Coles 17).

As the teacher in this classroom, I was available to facilitate learning by guiding the dialogue between the class and itself and the class and me. The difficulty with this approach is that the students did not come to the class with this model of the teaching-learning process in mind. The students didn't come there to learn to write; they came to be taught to write, and therein lay the germ of our disagreement. My refusal to do their learning for them made for spirited classroom discussions about the value of their writing and the value of my teaching (which, to some of them who weren't particularly enthusiastic about shaping a course out of their own experience, may have been suspect).

The students, compelled to draw from their own experience as a source for their responses, had their essays "published" for class discussion. In our classroom, the published student responses were intended to "make clear how someone sounds on the basis of how he/she has chosen to sound (and) is (a) way of enabling someone to develop the motivation to change" (Coles 17). This motivation, while slow in developing, began to take effect. Generally, as students often put it, and still put it today, their published papers were "torn to shreds" by the other students. Occasionally, writers were able to win over this critically active audience of their peers, and in doing so earned the respect of the other writers who also were attempting the shape their own experiences through writing. Once winning this respect, the students began to take great pride in

their writing, in their discoveries, in their ability to communicate and be understood in writing. I realized how far we had come as a class after a discussion of a country student's paper about her pet pig which she described as her "best friend," though she had entered him in the livestock competition in the state fair and he had ended up being sold for slaughter after winning his competition.

As the students had become writers to whom being understood was important, the deliberate misreading that ensued on the part of one of the students was particularly not funny. This reader incredulously mocked the author of the pet pig paper at being able to auction her "best friend" for slaughter. Immediately the class took sides. Those students from the country or from farming backgrounds tried to explain what the writer meant, how attached one could become to his or her pet knowing still, as she did, that eventually it would likely be slaughtered. Yet no amount of sincerity could penetrate the thick cynicism of our city critics who knew heartlessness when they chose to see it. At the end of two days upon which we debated the author's cruelty or sympathy, depending on which interpretation one was partial to, it dawned on me how far we had come as a class.

The writing was no longer an exercise in giving me what the students supposed I wanted. This game had become tiresome after a couple of weeks of my continually turning their questioning back into questions for them. Significantly, the students had become writers to whom being understood was important; not being misread was important. Students had begun to shape voices to accommodate their subject; they were creating individual styles of their own. Perhaps out of her frustration at being misunderstood, the writer of the pet pig paper challenged me to write a response to one of our assignments. She wanted me to experience, I believe, the same sort of despair many writers in the classroom had been forced to deal with when the topic assigned was deliberately vague and open-ended, as it always was (and in her case the despair was compounded by a deliberate misreading of her essay) – and present this essay to the class (which I did). Like the students, though they may not have known it, I really did have no idea where our discussions of writing were taking us, expect, I hoped, to a better understanding of ourselves as writers and as individuals.

John Fallon
Instructor
General Studies
Lima Technical College
Lima, OH 45904

PLUS ONE

The Library of the (Not-So-Distant) Future

Peter Lyman

The campus libraries are in crisis. The library budgets are "trapped between the demands of faculty, who expect immediate access to collections of printed journals, and publishers, who recognize that libraries are forced to purchase these materials at almost any cost." Peter Lyman, Dean of Library Technology at the University of Southern California, discusses with us the future. (Article appeared in Change *January/February 1991; permission for reprinting granted by Heldref Publishing Company, Washington, D. C.)*

The system of scholarly communication is in crisis. It cannot be revived by returning to traditional models, for the origins of the crisis are to be found in radical changes in the economics of the traditional print library, in addition to fundamental changes in the nature of scholarly communication brought about by technology. The system must be recreated by a national dialogue in which the place of the library in the life of the scholar can be rethought, and the library's relationship to disciplinary societies, publishers, and technology can be redefined.

The research library is the focus of this crisis, which has its origins in both the economics of the traditional print library and in fundamental changes in the nature of scholarly communication brought about by technology. The symptoms of this crisis are manifest in every aspect of the scholars environment and activities, including research, teaching, and learning:

- The cost of scholarly journals is rising much faster than any other research cost, forcing nearly every research library to reduce the number of journals in its collections, even if its budget has increased.
- The volume of scholarly information is increasing faster than the ability of researchers to manage it, publishers to print it, libraries to collect it, and scholars to read it. In some fields, the pace of research is so rapid that knowledge is time-sensitive. In a growing number of disciplines— and not just the sciences—knowledge is outdated by the time it appears in print. This shortened "half-life" of information places greater emphasis upon informal modes of communication—the informal exchange of papers at scholarly meetings—or the formation of "invisible colleges," private information networks of affinity groups that exchange information, often by computer networks.
- Although many faculty still prefer to find information by browsing in the stacks, library labor and infrastructure costs are soaring, and virtually the entire print collection is deteriorating because most of the knowledge published in the last century was published on acidic paper.
- New technology-based forms of knowledge are emerging that cannot be represented or distributed by print media. These new forms range from information sources so vast they can only be managed by computer databases, to new modes of scientific visualization based on computer graphics, to new art forms such as computer music, to multimedia teaching environments.

These changes pose major challenges for the library as we have known it: as a home for research and for teaching, and as the focus of the system of scholarly communication.

Library Support for Scholarly Communication

In the traditional system of scholarly communication, the library paid high subscription rates for journals in order to subsidize scholarly publication and disciplinary societies. Not only did this subsidy support disciplinary societies and their print publications, which were collected in libraries as the foundation of the faculty's research and teaching activities, it also supported the peer review system of evaluation, which was used in campus tenure and promotion processes. Today, in contrast, most scientific, medical, and technical journals are produced by commercial publishers who support scholarly communication with a profit motive. The library budget is trapped between the demands of faculty, who expect immediate access to collections of printed journals, and publishers who recognize that libraries are forced to purchase these materials at almost any cost.

There would be change even without the economic crises in the print system of scholarly communication, for technology is creating new forms of research and communication that are changing the way knowledge is represented and the institutions with which we organize and distribute knowledge. Like other units in the campus community, libraries have used technology to automate record-keeping, in this case acquisitions, circulation, and the library catalog. The focus today is more on knowledge and access issues: Experiments are underway to apply technology to today's library problems, such as the cost of scholarly journals, the preservation of works printed on acidic paper, and the publication and management of information and knowledge.

But there are many unanswered questions about technology in the library of the future.

- The real costs of these technological innovations are not known (because the technical infrastructure is subsidized); however, we typically do not calculate the real cost of traditional library activities, such as browsing in the stacks, either.

- The process of innovation must include a definition of the value of information in different formats, and exploration of new forms of copyright and licensing of information in digital environments.

- Most fundamentally, we do not know how technological innovation will change the social relationships and organizational forms with which we manage scholarly communication today.

It is likely, however, that information technologies will change the organizations that create and disseminate knowledge, including the library and higher education itself, as well as the daily work of faculty and students.

Technology and the Library

Libraries have been transformed by the *automation* of print-based technologies and by the expansion of the collection into multimedia formats. Library collections today include information in every medium and format: print materials in many configurations; audio-visual materials (records, cassettes, audio CDs, videotapes, laserdiscs); microfiche and microform; machine

readable data files; CD-ROM; software collections, etc. There is little question that these innovations have made libraries more efficient; the more interesting question is whether automation has led to *qualitative* changes, that is, changes in the quality of information and the process by which scholars create and use knowledge.

These questions are implicit in every technology; for example, Lewis Mumford argued that the clock was invented by monasteries as a way of regulating the monastic way of life, not as a scientific device. And although the printing press was first used to imitate hand-illuminated manuscripts, it ultimately led to a society dominated by a literate middle class and characterized by a scientific and rationalist culture.

Information technology includes cultural values as well as hardware or format; the conceptual tools that shape the way knowledge is defined are technologies. The library catalog is a technology, based upon rules for the organization and retrieval of knowledge, as is Boolean searching, which is the qualitative innovation of online databases. The printed book is also a technology, although one so familiar that as we focus upon the page the book disappears from our awareness, becoming an extension of hand and eye. But the book format is a technical innovation that replaced the manuscript, and the scroll before that. Because print formats have become the customary and habitual shape that we identify with knowledge, it is difficult to make judgments about the relative value of print formats and of new technological formats.

Even if information technology creates new formats for new kinds of knowledge, *these new formats add to today's print collections, they do not substitute for them.* Each format must be uniquely appropriate to the content and use of the knowledge it expresses. Technology should not imitate print when print is uniquely appropriate or cost effective.

In evaluating technology in the library, there are two levels of innovation: *the electronic library*, which consists of online delivery of knowledge that developed from print formats; and *the digital library*, which consists of new forms of knowledge based upon information technologies.

The Electronic Library

Virtually all texts are in a digital form at some point in the process leading to print publication, but relatively few are finally published in digital form. Nonetheless, the electronic library is starting to take clear shape, beginning with automated library catalogs, extending to online reference materials, online text databases, and electronic journals.

Online reference materials are becoming an established library resource, ranging from library catalogs to large bibliographic databases. Online databases are more than an efficient means of finding bibliographic information: Boolean search strategies are more powerful than the traditional card catalog and, if placed on a network, reference materials may be accessed from a desktop without interrupting the instruction or research process. This is the qualitative difference between CD-ROM, which is generally read by one person at a time, and networked information.

The strength of print, and digital forms such as CD-ROM, which imitate print, is that its unit costs are relatively small. Its weakness is that it fixes information in a geographical place and graphic form, and print further limits the interactive quality of the information. Digital formats have relatively high initial infrastructure costs (host computer, software, and network), but deliver information relatively cheaply. But the true scholarly value of digital formats is

that they are malleable, allowing the reader to create powerful and uniquely appropriate modes of access; and they may be networked, allowing access from any point with a computer and modem, and at any time.

Both of these characteristics are crucial for the library. The malleability and geographical ubiquity of digital texts mean that end users will soon need the skills of information navigation now possessed only by librarians. This is a fundamental change from the time when digital systems were so difficult to use that librarians searched them on behalf of library patrons; today, end users are asked to navigate knowledge structures that only professional librarians once encountered.

The most systematic such experiment in Carnegie-Mellon University's Project Mercury, a library information system with a sophisticated windowing interface within which images and texts can be called up from any point on the campus network. The system is designed on the principle that *the network is the library*, meaning that scholars sitting at their desks can retrieve documents stored on servers across the nation. This concept challenges the very existence of the library as the intellectual center of the campus.

Online information. Increasingly, the electronic library has begun to include the content of the library in digital forms as well. This includes vast quantities of electronic government data; there are many government bulletin boards offering data, ranging from the Department of Commerce's economic data to census data and geographic information. The Government Printing Office is now "publishing" the census and other data in CD-ROM format. There are also commercial publishers of information databases, such as CAS Online, which provides information on chemical structures. Textual databases, including MEMDB, the Medieval and Early Modern Data Bank, and the Thesaurus Linguae Graecae serve a growing number of disciplines in the humanities.

Online text and data resources are certain to grow, although we are far from a national system of publication like that governing print, one that guarantees quality, advertising, and distribution.

Print on demand. New print technologies have blurred the distinction between the publisher, the library, and the bookstore. McGraw-Hill has announced a program in which faculty can customize material from McGraw-Hill publications, which are then printed on demand and sold through the campus store. Cornell, in cooperation with Xerox and the Commission of Preservation and Access, is experimenting with a program to replace a collection of mathematics books that were printed on deteriorating acidic paper with an online collection that can be printed on demand. These projects suggest one shape the library of the future may take: regional databases of digital texts will be "browsed" online, and printed locally on demand for a fee. In this model, print would be used as the medium of choice for reading, but computers would be the medium of choice for storage, browsing, and the circulation of texts.

Digital Texts

The *electronic* library contains automated versions of print formats, such as card catalogs, serials records, and digital images of printed works. But information technology is also creating new kinds of texts that cannot be printed without fundamentally changing the nature of the knowledge they contain. A fascinating process of experimentation has begun to invent the scholarly forms appropriate to a digital medium, and new forms of publication made possible only be computers. Today, for example, there are several thousand automated computer "lists" that publish information and dialogues among affinity groups of scholars.

What is the relationship between the *content* of knowledge and the digital technologies that give it *form*, within which it is accessed and used? We face these questions every day: how do we choose between a face-to-face conversation, a telephone call, an electronic mail message, a printed letter, and fax? Each medium offers a unique spectrum of communication. Two recent studies of digital media suggest the way that changes in format lead to fundamental changes in communication patterns as well.

Electronic mail—or email—combines some of the rhetorical spontaneity of a conversation with some of the lexical structure of a printed letter; it is particularly useful for displacing time, allowing messages to be exchanged asynchronously. Yet electronic mail lacks the stability of either a conversation or letter, often resulting in emotional communication called "flaming." Sproull and Kiesler (1986) have found that group decisions made my email tend to be more radical than those made in person, because email lacks the social context cues of other media. Perhaps email is a new medium that will develop its own social cues; or perhaps the medium itself constructs a limited kind of sociality. In choosing a format, then, one must look for a congruence between form and content.

This principle is illustrated by a study that compares reader comprehension of a statistics text that was presented in different formats; print, online, and in a hypertext program called "Superbook" (cf. Egan, Remde, Landauer, Lochbaum, and Gomez, 1989). Readers understood printed texts better than the same text as it "scrolled" by on a computer. Yet, when placed within the Superbook program, a hypertext program in which the text is organized by the reader's questions, reader comprehension was higher than in the print version. Of course, different kinds of texts have differing rhetorical structures; UNIX documentation is a kind of reference material that lends itself to hypertext in a way that a narrative text (such as a novel) would not. The point is that format or medium must be appropriate to the content and structure of the knowledge in which it is presented.

Electronic journals. There are a number of refereed electronic journals or projects that are pioneers in the development of online scholarly communication. Online journals have the distinct advantage that information may be accessed as soon as it is available; it does not need to wait for the publication cycle. Some of these journals are published in both print and digital forms, others experiment with new forms of scholarly discourse, such as hypertext or online bulletin boards. Dick Phillips at Los Alamos has created a prototype of an interactive journal, a computer-based SIGGRAPH, which includes not only text and graphics, but speech, animation, and mathematical expressions that the reader may manipulate. The final characteristic is particularly important, since printed articles present data in a static form that precludes any real interrogation of the data other than the author's interpretation.

Electronic Journals

The following refereed electronic journals are examples of the development of new forms of scholarly communication based on information technology.

Comserve

SUPPORT@RPIECS (Bitnet) or Comserve, Department of Language, Literature & Communication, Rensselaer Polytechnic Institute, Troy NY 12180.

EJournal
Edward M. Jennings, Department of English, University at Albany, State University of New York, Albany, New York 12222.

Electronic Journal of Communication
Jim Winter. WINTER@WINDSOR1 (Bitnet). Jim Winter, English Editor, EJC/REC, Department of Communication Studies, University of Windsor, Windsor, Ontario N9B 3P4 Canada.

GDB and OMIM
Laboratory for Applied Research in Academic Information, William H. Welch Medical Library, The Johns Hopkins University, 1830 East Monument Street, Third Floor, Baltimore, MD 21205.

Journal of the International Academy of Hospitality Research
Scholarly Communications Project, Virginia Polytechnic Institute and State University, 1700 Pratt Drive, Blacksburg, VA 24061-0506.

New Horizons in Adult Education
HORIZONS @ SUVM (Bitnet), or Syracuse University Kellogg Project, 113 Euclid Avenue, Syracuse, NY 13244-4160.

Philosophy and Theology
Marquette University, Department of Philosophy, Milwaukee, Wisconsin 53233.

Postmodern Culture
JMEUG @ NCSUVM.BITNET, or Elaine Orr, Box 8105, North Carolina State University, Raleigh, NC 27695.

Psycholoquy
HARNAD @ CLARITY. Princeton. EDU (Internet) or HARNAD @ PUCC. BITNET; or BBS, 20 Nassau Street, #240, Princeton, NJ 08542.

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Project Mercury, Mercury Documents Coordinator, Administrative Offices, Carnegie Mellon University Libraries, Frew Street, Pittsburgh, PA 15213.

Dick Phillips, SIGGRAPH Project, Los Alamos National Laboratory, P.O. Box 1663, MS B-272, Los Alamos, NM 87545.

Lee Sproull and Sara Kiesler, "Reducing Social Context Cues: The Case of Electronic Mail," *Management Science*, 32:1492-1512, 1986.

Online journals represent an important experiment in scholarly communications both because of their innovative content and because they may develop into a cost-effective alternative to commercial publications. The scholarly community is almost wholly dependent upon commercial publishers for its journals, although once nearly half of scholarly journals were campus based. The library and the university press may again have to publish scholarly journals, perhaps in electronic or print-on-demand formats, to control costs.

Knowledge management. Richard Lucier at the Welch Medical Library of Johns Hopkins University has brought the library into the laboratory itself, as a partner it "knowledge management" (cf. Lucier, 1990). While the electronic library explores the use of new formats to acquire, store, and circulate information, the concept of "knowledge management" refers to the organizing concepts that give information structure. This concept began with Victor McKusick's *Handbook of Mendalian Inheritance in Man*, a handbook that organized the findings of genetic research into a single sourcebook. As the amount of information began to accelerate, the publication process fell behind. The online version, called OMIM or *Online Mendelian Inheritance on Man*, can be updated at any time; thus a reader finds and selects data online, and downloads or prints the citation. Knowledge management techniques have been applied to the *Genome Data Base* (GDB), which includes gene locus and marker information, and includes links to the literature and other online source material. The information is posted online, and peer reviewed online by an international panel of experts accessing the database by network.

Similarly, the Brookhaven national labs have a database of three dimensional images of organic molecules that are posted and peer reviewed online. There graphic images are approximations based upon x-ray diffraction data and may be rotated in three dimensions; no two-dimensional print images could adequately represent this data. In this case, computers have created a new kind of knowledge, which only knowledge-management tools can "publish." The meaning of the word "publication," with its connotation of peer review and editorial quality, is being separated from the print format that we unconsciously associate with it, and return to its original meaning "to make public."

Is the Network the Library?

Given these kinds of changes, what will the library of tomorrow look like? Can it retain its role as the intellectual center of the campus when it no longer occupies a fixed geographical place? Often defining the center of the campus, the library represented a place with a special relationship to thinking, such as occurs when browsing through the stacks. How will the library be defined if collections are electronically stored on servers across the nation (and perhaps around the world) and accessed by digital network from the desk?

The collection. The network is an essential characteristic of the digital library, although personal computers and CD-ROMs are often brought into the library because they fit traditional library customs and habits based on print. The scope

of networked digital libraries today is more defined by culture than technology, by competition for prestige among institutions, or by legal restrictions imposed by the publishers of digital information resources. Technically, all libraries worldwide could have unlimited access to all networked information. The first experiments in shared library resources are well underway, such as CARL (the Colorado Alliance Research Libraries network that links 223 libraries in Colorado, and which may be accessed through the Internet) or MELVYL (the union catalog of the University of California system). Nearly 100 library catalogs and other resources are accessible on the Internet, the national digital network linking research universities with industry and government. Thus, the network is a valid image of the library understood as a medium for the acquisition, storage, and circulation of texts, particularly if it leads to the creation of shared resources. The network may become a medium for making information public. The patron of the online library will browse through digital texts and images, select and download research materials, and print the, possibly for a fee.

There are many problems with this scenario, not the least that library patrons like browsing in the physical stacks, and that collection size is a primary measure of status in the competition between institutions. Clearly, an online collection will never replace a physical print collection, but the principles of collection development must now include a decision about format. This kind of decision is driven by the cost of the print collection—primarily serials—more than any other factor. It will require the development of a national online library collection, and a fundamental change in the habits of information literacy with which we gather and use information.

Information literacy. Information technologies imply fundamental changes in the librarian's profession. The teaching role of the librarian will predominate in a digital library, to create and support a new culture of information literacy. The American Library Association has defined information literacy in the following statement:

> To be information literate, a person must be able to recognize when information is needed and have the ability to locate, evaluate and use effectively the needed information....Ultimately, information-literate people are those who have learned how to learn. They know how to learn because they know how knowledge is organized, how to find information, and how to use information in such a way that others can learn from them. They are people prepared for lifelong learning, because they can always find the information needed for any task or decision at hand (Final Report, American Library Association Presidential Committee on Information Literacy, January 1989).

This definition clearly places information literacy squarely within the notion of "general education" or "liberal education." However, few schools have begun to integrate information technology skills into the core curriculum, or defined the role of librarians as teachers of these skills. Clearly the library of tomorrow will be the home of the core curriculum of the future, which this definition of information implies, and the place where students of any age will return to renew their knowledge.

Information Rights

The large number of library catalogs accessible today on the Internet

suggest that the content and information resources of a national education and research network could be defined as a national digital library. Such a "library" would have to be managed in such a way as to accomplish the functions of disciplinary societies, publishers, libraries, and book stores in the print world in a new system of scholarly communication. But the most important questions in establishing this system remain unanswered.

Our society has a reasonably complete understanding of the legal rights that have surrounded speech and print for the past 200 years but we are only beginning to define the issues surrounding digital expressions (Cf. Gilbert and Lyman, 1989). As the definition of the library broadens, perhaps to include all information resources collected and accessed through networks, what principles should guide collection and access policies? What are the rights and duties of citizens in their capacity as users of the emerging international digital infrastructure?

How will the rights of free speech and privacy of network communication and data be balanced with the need to ensure the security of the system (e.g., against hacking, viruses), prevent illegal activities (e.g., fraud or theft) and regulate material that may be offensive to community or national standards (e.g., pornography, abusive communications, unwanted junk mail)? Who will make these decisions? What kinds of due process rights will govern the management of these issues?

The distinction between author and reader is much clearer in print media than in digital media. Since digital works are easily moved, copied, or changed, what ethical standards and legal rules will ensure that intellectual properties are licensed and attributed to their authors? Copyright, which governs the publication and distribution of knowledge, is based upon the physical qualities of print that are not typical of digital environments. But the functions of copyright, which the Constitution defines as the progress of science and the useful arts, must be translated into this area.

The Future

Can a new system of scholarly communication arise from information technologies? There are great problems in the transition. For example, thus far, most institutions have not been willing to grant promotion and tenure for digital scholarship, but adapting standards developed for print to new scholarship in new media is not a simple problem. For one thing, digital scholarship often uses new formats and produces new kinds of knowledge for which scholarly standards are still emerging.

On campus, the institutional infrastructure supporting scholarship is already starting to change. The library, the computer center, and the bookstore are growing increasingly interdependent, although their roles and relationships are rarely defined in a coherent way by campus information policies.

However, the most important variable is not technology; rather, it is the culture and lifestyle of faculty and students. In the short run, it is likely that new technologies will be used to make traditional modes of scholarly communication more efficient. However, this sort of "automation" will not solve the crisis in scholarly communication. Either we must be willing to pay a great deal more to preserve traditional scholarly habits, such as browsing in stacks, or the scholarly community must adopt radically new modes of storing and accessing information (cf. Battin, 1989). It is important to remember that today's system of scholarly communication—print journals, research universities, and research

libraries–is only a century old. Although our scholarly habits seem timeless, change has been more the rule than the exception in the last century, and computers are only the most recent technology to bring change to the system of scholarly communications.

Peter Lyman
Director of the Center for Scholarly Technology
Dean of Library Technology
University of Southern California
Los Angeles, CA 90024

PRACTICUM

On the Road with Technical Writing: Teaching the Employee to Write Better

Viola Newton

"Teaching Technical Writing on-the-road means meeting the business executive, the employer, the skilled and the unskilled worker, and writers in government and industry in their working environment. It means going to the job site to inform, motivate, and present concepts and characteristics of technical writing . . ." More and more, industries and businesses are requesting on-site college training. Viola Newton shares with us her thoughts and experiences with teaching technical writing to on-site students.

Kenneth Roman and Joel Raphaelson report in their book *Writing That Works* some basic information for instructors who teach people in business and industry. These authors discuss interviews held in 1979 by *Fortune* magazine with successful corporate executives. The interviews asked, "What kind of academic program best prepares business school students to succeed in their careers?" The answer clarified what technical writing does: "Teach them to write better." Roman and Raphaelson explain this "simple wish," as *Fortune* calls it, as a "plea to teach fundamental skills that few people develop these days; the skill to write with *clarity, precision, brevity* and the *force of logic*." Essentially the intended goal of any technical writing instruction is to teach people the concepts and skills they need to communicate effectively in the workplace. Therefore, the technical writing instructor who goes on-the-road will have to develop strategies that involve good judgment and flexibility in order to be successful on the job.

Teaching technical writing on-the-road means meeting in their own work environments the business executive, the employer, the skilled and unskilled workers, and writers in business, industry and government. It means going to the job site to inform, motivate, and present the concepts and characteristics of technical writing to a broad and often non-receptive audience. What's more, these people sometimes view writing as an unpleasant, time-consuming chore, or something that takes them away from their "real work." Since many of the participants are required to enroll in these in-service sessions, the on-the-road technical writing instructor must consistently exercise a sense of good judgment and design a flexible program. This program must satisfy the needs of the

employees and teach them that good technical writing means being able to communicate successfully in an organization.

Before preparing to go on-the-road, the instructor must create a syllabus that fills all of the employer's needs and that answers the employees' major questions. This syllabus should be prepared from some authoritative source (e.g., technical writing textbook, handbooks, and style guides). In particular, the syllabus should address the needs of people whose job requires some form of writing every day in the workplace. A good example of such a text is *Technical Writing: Structure, Standards, and Style*, a book by Robert W. Bly and Gary Blake, which does the following:

- Provides a checklist of seven qualities a technical document should have
- Discusses in detail the whole range of technical writing tasks, from straight technical research reports to trade journal advertisements and sales brochures
- Covers the proper use of numbers, units, equations, and symbols that will help keep mathematics correct and consistent in the writing
- Reviews the basic of grammar and emphasizes rules that will help avoid the most common errors in technical writing
- Presents the basic principles of technical composition and discusses the tone, style and voice used in the various types of technical writing
- Shows how to avoid jargon, cliches, antiquated phrases, deadwood, and other stylistic evils

The idea is to create a syllabus that establishes generalizations which apply to almost any technical document. With such a syllabus, the instructor will be prepared to meet the variety of responses, from the first day on the job site with examples, handouts and practical exercises that will actively involve all members of the group.

The on-the-road instructor must develop an efficient syllabus. It must be a time-saving device. Most people attending in-service workshops get time off from their daily responsibilities in business, banks, insurance companies, construction or engineering firms, government agencies or non-profit organizations. And many have to return to work after the class meets. These people need to acquire as accurately and as swiftly as possible information that is useful in various writing situations. It is necessary, therefore, to have a well-planned strategy to ensure that the material has immediate utility.

Developing a strategy begins with using good judgment; this means first finding out what the audience needs before developing teaching plans, assignments or practice exercises. First, the instructor should survey the people in the audience. A written questionnaire, checklist or verbal response question-and-answer session can ascertain the particular objective(s) of each person. A simple question such as "What precisely do you want to cover in this workshop?" will evoke a variety of responses. Next, the instructor can have participants share anecdotes about their own writing experiences. Properly motivated, participants will volunteer humorous or embarrassing situations they have experienced with letters and memos that they have written or received. Such sharing helps the participants define for themselves the qualities of effective writing. But the benefits of such diagnostic techniques are many; most

importantly, they give the instructor a sense of the work context—the nature of the jobs done, the organizational hierarchy and the attitudes of the participants. Admittedly, without this sense of context, the instructor is operating in an educational vacuum. But with simple questions the instructor can gain enough background to use as a basis for planning units and developing materials for each topic to be discussed.

When it is time to engage the group in elements of good technical writing, the instructor should begin with a basic review of grammar rules. This review might include sentence structure, abbreviation, capitalization, and punctuation. By starting with these rules, the instructor gives participants the key to proper or standard use of grammar in technical writing; these rules remind participants that readers expect certain conventions to be followed and that errors undermine the effectiveness of the technical communication and reflect negatively on the ability of the writer.

The next step in the strategy is to look carefully at the way numbers, units, equations, and symbols are used to communicate technical data. Again, tersely phrased rules should summarize the main points. For example, the rules for presenting numerical data can be summarized thus:

- Write out all numbers below ten.
- Place a hyphen between the number and the unit of measure when the number modifies a noun.
- Write decimals and fractions as numerals.
- If a number is an approximation, write it out.
- Don't begin a sentence with numerals.

Rules like these give the participant a guide to insure consistency and the adherence to an accepted convention.

Other units can help participants develop an accurate, brief, and concise style. Again, simple rules, examples and exercises can help participants build a broader repertory of stylistic options that they can draw from as they write and edit their own work. Basic to this repertory are units on the following:

- Using active rather than passive voice
- Choosing simple rather than elegant language
- Choosing concrete rather than abstract language
- Editing long sentences and paragraphs into shorter and easier-to-grasp units.

Finally, the instructor who goes on-the- road must be flexible. This means recognizing the differences in the writing tasks individual participants perform. To be flexible, activities must be structured to allow participants to *share* experiences with the group. Written exercises should stress collaboration throughout the writing process. For example, participants can work collaboratively for brainstorming ideas, writing purpose statements, examining various forms of documents from different organizations, compiling information that would contribute to a document, evaluation samples of a writing task, and checking to see whether a written passage adheres to standard principles of

grammar. To do all of these exercises, the instructor must allow the participants to move from one group to another in order to exchange ideas and facts about technical writing and to create a congenial, workable atmosphere with movement and activity. Even though a lesson plan may follow a sequential order (e.g., first, next, third, and so on), the use of collaboration will help the instructor to observe the actions of the group and to plan for the wrap-up session.

In many ways the instructor who goes on-the-road is more a facilitator than a teacher. The effective instructor helps employees identify their own needs and shows then strategies for improving their own writing. The process of on-the-road instruction involves careful planning and gathering of information, organizing, reviewing, revising documents and editing. To have success in an unfamiliar teaching environment, the instructor must provide the participants a sense of security by teaching rules and by exploring a variety of collaborative techniques vital to most kinds of technical writing. Nearly every on-the-job teaching experience will require good judgment and flexibility, and this is what is needed to teach people in business, industry and government the desired goal that *Fortune* magazine expressed in 1979; instructors need to "teach them to write better."

Viola Newton
Assistant Professor
Communication Skills
Columbus State Community College
Columbus, OH 43215

FORUM

Issue: Are Faculty Mentoring Programs Effective?

With the increase in part-time hiring in the two-year colleges, mentoring has become a necessary role for full-time faculty. It has not functioned, however, without difficulty and serious questioning. Linda Houston and Arnold Mokma of The Ohio State University, Agricultural Technical Institute, and Nancy Stone of the University of Wisconsin, formerly of the University of Toledo, address the effectiveness of mentoring.

A Colleague Support System: It Does Work

Linda Houston and Arnold Mokma

Introduction

The Ohio State University Agricultural Technical Institute (ATI) began the Colleague Teaching Support Program in Autumn, 1983. The program, or "Buddy System," was formulated by the Institute's Teaching Committee as part of its effort to improve teaching. It is our belief that mentoring systems are effective.

The Program

The original intent of the program was to aid new faculty at ATI by teaming

them with an ATI veteran; the first year was so successful that in 1984 the goal was changed to help all faculty members strengthen their teaching, research, and extension skills by sharing ideas and concerns with each other. The program was especially organized to have faculty work and share techniques with those who did not necessarily share course work or students i.e. faculty in horticulture work might with faculty in the animal sciences.

The program is voluntary. Faculty who elect to join the program offer their time and expertise to work with another member of the faculty, sharing information and concerns over a year's time. Some areas which may be discussed include:

1. Structuring of syllabi;
2. Developing assignments and tests;
3. Structuring faculty accessibility (office hours, etc.);
4. Developing teaching techniques;
5. Planning time management;
6. Completing administrative work (evaluation forms, college forms, etc.);
7. Advising students (academically and personally); and
8. Dealing with other professional problems.

Areas of sharing, however, need not be limited to those above. It is important to remember that this process is to be a support system for both faculty members in the team, each learning from the other, thus strengthening his or her skills as college faculty members. Though this program is especially helpful to incoming faculty who are encouraged to participate, we have found that a strong bond has developed between partners who are institute veterans.

The program's description follows.

How It Works

At the beginning of each fall quarter, the Teaching Committee holds an in-service workday for all faculty. At that meeting, an informative description of the program is handed out with an opportunity to enroll in the program.

The Teaching Committee member who coordinates the Buddy System then meets with the Director of Academic Affairs and pairs faculty, trying to match strengths and weaknesses. Faculty who wish to work with a specific person are asked to indicate that individual. Those requests are honored if possible. It is very important to remember that this is a volunteer program and once the pairs are matched, no one interferes with the match. The "buddies" decide how they want to proceed, and even if they want to proceed. At the end of the academic year, the participants are asked to express their opinion on the success or failure of the program and to suggest any revisions.

The program takes very little time to organize and no time to administer. The payoff of the program is the bonds formed by faculty which can only enhance the overall mission of the institution. Colleagues need to take the time to share ideas, concerns, successes and failures. By pairing faculty from different disciplines, the threat of professional "weakness" is reduced. Also there is ample opportunity to learn how someone else has been dealing with a similar problem.

The weakness of this program is that left to an individual not charged with the specific task of organizing the program, it may not function each year. At this time, new faculty have been left to fend for themselves. The mentoring system is essential to give support to new members.

Linda Houston
Associate Professor
Communication Skills
The Ohio State University,
Agricultural Technical Institute
Wooster, OH 44691

Arnold Mokma
Assistant Director of
Academic Affairs
The Ohio State University,
Agricultural Technical Institute
Wooster, OH 44691

Is the Mentoring Program Appropriate for a New Faculty Member Who Has Previously Taught?

Nancy R. Stone

Is the mentoring program in a community college appropriate for a new faculty member who has preciously taught in higher education? My answer to this question is a resounding, "Yes." I came to the University of Toledo Community and Technical College with two years of full-time college teaching experience. Because I was a new faculty member, I was assigned a mentor. My mentor was extremely helpful in guiding me through my first two years as a faculty member and in Helping me achieve success on the road to tenure.

Each institution of higher learning has its own culture, its own procedures, and its own ways of getting the professional job of teaching done. A faculty member may have learned one culture and set of procedures at one institution, but those same expectations and procedures do not necessarily carry over to the new institution. Typically, new faculty members are given a faculty handbook and ex;pected to read and understand it. The deans at ComTech did provide some orientation to me as a new faculty member, but I was unsure as to what questions I could "safely" and respectfully ask them. For example, one such question is which are the best committees on which to serve? An administrators answer to that question might be entirely different from a faculty member's answer. I asked my mentor that question and received a thorough answer which was tailored just for me, expressed in a way that a dean could probably not provide. So a mentor who is a seasoned faculty member can serve as a touchstone and sounding board to a new faculty member.

My mentor served a variety of other functions for me, guiding me when I was too new to know that questions to ask. For example, my mentor told me what forms had to be handed in at what time for tenure, promotion, and merit evaluations. She guided me as to what forms of documentation were appropriate, and how much was appropriate. She explained the whole tenure-promotion-merit process to me in a way which I never could have understood from just reading the faculty manual. She also suggested activities I could perform which would help me in getting tenure, promotion, and merit raises, a kindness which only a seasoned and caring colleague could perform. She suggested other faculty members I could consult when she was not able to answer my questions. She became a leading figure in the networking process which is so important for success to new faculty. In short, she set me up for success in the organization of the community college with the guidance I greatly needed.

My mentor also helped me in other ways. She helped me set goals for professional growth which were reasonable in the institution; she later helped me to evaluate my progress towards those goals. She observed my teaching in my classes, then met with me afterwards to review the lesson and provide unthreatening feedback. She helped me understand the structure of my department so that I knew which faculty members performed which roles.

Having a mentor helped me to have a successful first two years, so successful that I eventually received a citation of merit from my institution for my work during the second year. That award was due, in large measure, to the leadership of my mentor.

I have now moved on to another institution which does not have a mentor program. And the life of new faculty member seems rather lonely in comparison to the life I led at ComTech. But I am using all I learned from my mentor at ComTech to help me negotiate the expectations and procedures of this new institution. I have, I hope, internalized all that my mentor taught me. Perhaps, with the help of other seasoned faculty members, I can become a mentor myself one day.

Nancy R. Stone
Assistant Professor of Reading Education
Department of Reading Education
University of Wisconsin in Oshkosh
Oshkosh, WI 54901

REACTION

Reaction to "Using the Feasibility Study to Promote a Communications Strategy in Technical Writing"

Edward W. Holzapfel, Jr.

The Journal *encourages letters and articles in response to its contents, policies and to OATYC activities. Edward Holzapfel, Jr., expresses his delight with Terry White's "Using the Feasibility Study to Promote a Communications Strategy in Technical Writing" (Fall 1990).*

In the Fall 1990 issue of the *OATYC Journal*, Terry White presented an interesting teaching/learning project as an alternative to the standard pedagogy in technical writing courses. "Using the Feasibility Study to Promote a Communications Strategy in Technical Writing" presents a fresh approach to teaching critical-thinking, problem-solving, decision-making, and writing skills.

The course has several key points which should contribute to an effective learning experience.

First, the problem to be studied is characterized as "real" in contrast to "realistic." That is, it is a significant part of one of the students' environments, in contrast to a pretend situation found at the end of a chapter in the course text.

The course requires students to choose a problem to investigate and evaluate which is found in one of three environments: the workplace, the campus, or the community. Students have a tendency to take real problems more seriously. They cannot bend or ignore the parameters of the situation as they can with a case study problem assigned from the end of the chapter. In the "realistic" problem, students only pretend to live the situation. In a "real" problem, they must cope with the variables found in the problem environment. This foundation forces students to approach a reality that will not go away; they must face it and attempt to solve it.

Second, the use of videotaping provides oral as well as written communication experience. It also provides a situation in which students can expect peer appraisal and in which they must justify their work. This approach should provide that extra bit of motivation for the students to perform to their capabilities.

Third, the project encourages a strong emphasis on the use of primary resources while keeping use of secondary resources at a minimum. Students must gather and evaluate the source data they use in the project rather than relying on"pre-packaged" information. Interviewing skills can be taught. Students must listen and record information carefully.

Fourth, the approach is integrative. It requires the use of many skills: critical reading, observing, data gathering, formulating alternative solutions, and presenting the results in coherent oral and written reports. The usual project which relies on secondary data does not provide this integrative experience as completely as does the hands-on primary method.

Fifth, the learning process is punctuated by required conferences, not simply perfunctory progress reports. The face-to-face conference provides a mechanism for meaningful informative evaluation of students' projects.

This approach to technical writing is more demanding, both for students and teachers; however, the extra involvement required of students in the learning experience is surely worth the effort.

Edward W. Holzapfel, Jr.
Dean of Administration Services
Washington State Community College
Marietta, OH 45750

The Editorial Board of the OATYC Journal *is soliciting written responses (three or four paragraphs) to the question* ***How should the two-year college curriculum help students gain knowledge of the nonwestern world?*** *The response should address one of the many possible perspectives. Here is your chance to participate, and the Board encourages you to do so. As determined by the Board, the best responses will be published in the next edition's "Forum" section,* **deadline: September 18, 1991.**

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Jim Fullen, Editor
Ohio Association of Two-Year Colleges
Central Ohio Technical College
University Drive
Newark, OH 43055, (614) 366-1351

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